—THE—

Therapeutic Gazette

WHOLE SERIES, VOL. XXIX. DETROIT, MICH., JUNE 15, 1905. THIRD SERIES, VOL. XXI, No. 6.

CONTENTS.

Original Communications.

The Use of the Antitoxin of Diphtheria in the Treatment of Cerebrospinal Meningitis. By Randle C. Rosenberger, M.D. 361
The Use of Diphtheria Antitoxin in the Treatment of Cerebrospinal Meningitis. By M. E. Pennington, Ph.D. 363
The Use of Specific Products of Tubercle Bacilli in the Treatment of Tuberculosis. By James Sawyer, M.D. 364
Intestinal Perforation in Typhoid Fever. By Frank C. Wright, M.D. 368
Cryptogenetic Septicopyemia, with a Report of Three Cases. By Julius L. Salinger, M.D., and Georgianna Walters, M.D. 373
The Treatment of Pneumonia. By H. A. Hare, M.D. 378

Leading Articles.

The Value of Nitroglycerin 382
The Importance of Pure Milk in the Dietetic Treatment of Infectious Diseases 383
The Open-air Treatment for Tuberculosis 383
Permanganate of Potassium as a Remedy in Snake-bites 384
Syphilis Acquired in Professional Work 384
X-rays and Sterility 385

Reports on Therapeutic Progress.

Treatment of Conjunctivitis 381
The Efficiency of Copper Foil in Destroying Typhoid and Colon Bacilli in Water 381
The Treatment of Acute and Chronic Rheumatism 386
Choice of a General Anesthetic and Selection of Method of Administration 388
Cardiac Failure in Plague and its Treatment 389
The Digestion of Caseins, and its Relation to Certain Problems in Infant Feeding 392
The Treatment of Bright's Disease. 393
Erysipelas Treated by Injections of Antistreptococcus Serum 394
The Serum Therapy of Tubercle 394
Some New Views of Infant Feeding. 394
Alcohol in Disease 396
Mucous Colic 396
On the Use of Typhoid Filtrates in the Treatment of Typhoid Fever. 397
Ergot and Arsenic in Chorea 398
The Treatment of the Ear Complications of Scarlet Fever 400
The Effects of the Roentgen Ray upon Cancer 401
Convulsive Tic 402
Orthoform in the Diagnosis of Gastric Ulcer 403
The Treatment of Puerperal Fever.. 403
The General Effects of Antidiphtheritic Serum 404
Limitations of the Value of Nitroglycerin as a Therapeutic Agent.. 405
Medical Treatment of Gastric Ulcer 406
Iodine in the Treatment of Postoperative Sepsis 407
Chloride of Ethyl as a General Anesthetic 409
Diffuse Peritonitis—Treatment 410
Pyloric Stenosis in Infants 410
Acute Intestinal Obstruction—Surgical Treatment 410
Catarrhs of Middle Ear Treated by Compressed Air and Nebulizer.... 411
Results of Treatment of Perforated Ulcer of the Stomach 412
Renal Calculus—Indication of Presence by X-rays and a New Method 412
Experimental Effects of Chloroform on the Kidneys 413
Exstrophy of the Bladder—Ureter Implantation by Maydl Method... 413
Effects of Radium on Cancer 414
Treatment of Scapulum Alatum 414
Gunshot Wounds in Time of Peace. 414
Hypertrophica—Treatment by Galvanocautery 415
Floating Kidney—New Method of Treatment 415
Preparation of Catgut 415
Cancer of the Tongue—Treatment.. 415
Sciatica—Injection Treatment 416
Abscess Following Typhoid Fever.. 416
Prostatic Obstruction—Operation... 416
Supracondyloid Amputation at the Knee—Modification 417
Femoral Hernia—New Operation... 417
Puerperal Septicemia, and the Value of Antistreptococcic Serum. 417
Non-suppurative Diseases of the Middle Ear—Treatment 417
Two Cases of Excision of Gasserian Ganglion for Neuralgia—Operation 1896—No Recurrence 419
Inoperable Cancer—Treatment by Hypodermic Injection 419
Torsion of the Spermatic Cord 420
Difficulties of Anesthetization and Their Correction 420
Antiseptic Treatment of the Puerperal Woman 421
Mastoid Operations 421
Anthrax Successfully Treated by Sclavo's Method Without Excision 421
Laryngeal Tuberculosis: Treatment 421
The Successful Treatment of Foreign Bodies which had been Swallowed by the Internal Administration of Cotton-wool 422
Acute Pelvic Peritonitis Associated with Gonorrheal Salpingitis—The Differential Diagnosis and Treatment 422
Tuberculosis of the Knee-joint 422
The Effect of Tubal Abscess upon the Position of the Ureter 423
Tracheal Stenosis from New Growth 423
Colles's Fracture 423
Sympathectomy for Glaucoma 424
Hernia in Infancy and Childhood—Its Management 424
Tubercular Peritonitis 425
A Condition of the Lower Limbs Often Mistaken for Phlebitis 425
Duodenal Ulcer and its Treatment.. 425
Surgical Anesthesia in Childhood... 426
Reviews 426

Correspondence.

London Letter 430
Paris Letter 432

Original Communications.

THE USE OF THE ANTITOXIN OF DIPHTHERIA IN THE TREATMENT OF CEREBROSPINAL MENINGITIS.

BY RANDLE C. ROSENBERGER, M.D., PHILADELPHIA,
Assistant Professor of Bacteriology in the Jefferson Medical College of Philadelphia.

[From the Laboratories of the Jefferson Medical College Hospital.]

The employment of the antitoxin of diphtheria in the treatment of cerebrospinal meningitis is attracting a great deal of attention, not only from the clinician but from the bacteriologist. As to its curative effects too few cases have been treated to give a definite opinion. According to specificity, it seems improbable that a definite or specific reaction occurs. It might, however, represent a bactericidal action of the blood serum.

When a rabbit, guinea-pig, horse, or any animal, including man, receives inoculations of a specific substance, the body becomes so accustomed to it that in time the substance produces no effect either locally or systemically.

The specific substance may be a bacterial poison (a toxin), blood from another species, a chemical, a vegetable poison, or it may be bacteria in a dead or living condition. Repeated inoculations will finally bring the body to a state of immunity. This condition is due to the formation in the fluids of the body, and especially the blood serum, of a substance (or substances) causing certain reactions when brought in contact with the materials or cells used to bring about immunity.

Take, for example, a rabbit inoculated repeatedly with human blood. The serum of this animal when brought in contact with human blood, or fluids containing human blood, will cause a precipitation and disintegration of the blood cells—cytolysis. Take the serum of this same rabbit and bring it in contact with the blood of a healthy rabbit, and no such reaction takes place.

Inoculate a guinea-pig with the blood of a rabbit, and in the serum of the pig there is developed a substance (or substances) which destroys the red cells of the rabbit's blood, but will not destroy or alter in any way the blood of another guinea-pig. Let us use ricin to inoculate an animal, at first in very small, non-poisonous doses, and gradually increase the dose and frequency of inoculation until an extremely toxic dose is administered. The animal becomes immune to the poison, and in its blood there is formed a substance which is distinctly antagonistic to ricin—antiricin.

Now let us use the toxin of the bacillus of diphtheria and inoculate an animal, first with non-lethal doses, and increase the amount gradually until we bring about such a condition of immunity that enormous doses can be withstood, even when injected into the circulation. In the blood serum of such an animal is developed a substance which acts directly against the toxin, an antitoxin. It does not exert this effect upon all toxins—*i.e.*, those elaborated by other bacteria. In other words, the substance which is formed in the body of an animal immunized is specific only for the substance with which is was inoculated.

All of these substances, whether produced by the inoculation of blood, of bacteria, of toxin, or vegetable poison, belong to a group of substances termed antibodies. The action of each is, so to speak, specific, and each is formed by a definite chemical union. If there is no union brought about, we will not have any antibodies formed. As to the antitoxin of the bacillus of diphtheria, this substance acts specifically against the toxin of the bacillus of diphtheria. It does not kill the bacillus, but, as the name indicates, it neutralizes the toxin, thus inhibiting systemic poisoning. If we had the streptococcus pyogenes or the pneumococcus as the causative factor in the production of a pseudomembranous process which resembles the one produced by the bacillus of diphtheria, we would not expect the antitoxin of diphtheria to cure this affection. Instead of using the antitoxin of diphtheria we would resort to what is known as an antimicrobic serum, one which acts against a specific bacterium, and hence would administer antistreptococcus or antipneumococcus serum. The reason is that we wish to destroy the bacteria, and not neutralize the toxin. Further, we know that the streptococcus and the pneumococcus frequently find their way into the general blood-supply, causing bacteremia, and this fact also prompts us to use an agent that will destroy the bacteria. We would not use an antistaphylococcus serum for a streptococcic or pneumococcic process, but we must use a specific substance in each particular case. In diphtheria, the bacillus remains distinctly localized where the pseudomembrane has formed, and only on the rarest occasions is this organism found in the blood during life. We do not resort to an antimicrobic serum, but knowing that the bacillus is constantly elaborating a toxin, we administer an antitoxin.

As to cerebrospinal meningitis, this malady is generally conceded to be due to the meningococcus of Weichselbaum. At the present time there is no antitoxin for the toxin of this organism. If the disease is due to a specific bacterium, then a specific serum, an antitoxic or antimicrobic one, should be used in the treatment of the malady.

According to the latest theory of immunity (Ehrlich's) there must be some suitable receptor or side-chain existing in the body before antibodies are formed. This is well illustrated by taking the toxin of the bacillus of diphtheria. When this substance is elaborated and diffused through the system (if the latter is at par) there is a combination of the toxin with the suitable receptor, and this union brings about the formation of the immune body. If there is no suitable receptor present, then no chemical reaction takes place, because the receptor must have some assimilable foodstuff—*i.e.*, toxin.

There is therefore no good reason to believe that antidiphtheritic serum can be of value in cerebrospinal meningitis.

THE USE OF DIPHTHERIA ANTITOXIN IN THE TREATMENT OF CEREBRO-SPINAL MENINGITIS.

By M. E. Pennington, Ph.D.,
Assistant Bacteriologist, Bureau of Health, Philadelphia; Director Philadelphia Clinical Laboratory.

The unusual prevalence of cerebrospinal meningitis during the past year, and especially during the winter of 1904-05, has reawakened the medical profession to the fact that, while the disease is believed to be highly infectious and dependent upon the presence in the brain and cord of certain bacteria, their source and path of entrance are still unknown. The extreme difficulty attaching to the isolation and cultivation of the diplococcus intracellularis meningitidis has, so far, curtailed our knowledge of its biology; and the fact that the reproduction in animals of symptoms of spinal meningitis after inoculation with this diplococcus has been accomplished by but few bacteriologists, and then only when the cultures were brought into direct contact with the brain or cord, has proven an insurmountable bar to the development of a rational prophylaxis or therapy along the lines laid down by modern theories of immunity. Until such a system has been founded upon test-tube studies and fixed by animal inoculations we must expect to hear of many curative procedures, differing widely among themselves, and yielding beneficial results in the hands of their advocates. Lacking accurate scientific data upon the bacterial history of this disease, we are not in a position to positively oppose some of these methods; neither, on the other hand, are we justified in unreservedly adopting them until laboratory as well as clinical evidence shall be forthcoming.

Among the very recent methods most widely noted is the inoculation of diphtheria antitoxin as a curative agent in cases of cerebrospinal meningitis. Waitzfelder ("The Treatment of Epidemic Cerebrospinal Meningitis," *Medical Record,* vol. 67, pp. 361-365), acting upon some unpublished laboratory experiments of Wolff, of Hartford, Connecticut, has used antitoxin with encouraging results in seventeen cases of the disease coming to the Gouverneur Hospital, New York, for treatment. Three of the patients died; five recovered completely; and nine, at the time the paper was written, were still under treatment, five of them being considered out of danger.

If a more extended application of this method in the hands of other clinicians bears out the experience cited by Dr. Waitzfelder, it will be of great interest from not only the humanitarian standpoint, but from the scientific side as well, since the use of an antitoxin which is specific for one infection to neutralize the toxin of a totally different organism is at variance with the theories best suiting the facts of immunity.

Among all the antitoxins of recognized curative value, such as the antitoxins for cholera, tetanus, rabies, bubonic plague, etc., diphtheria antitoxin is preëminently the most successful when applied to combat the toxins produced by the Klebs-Loeffler bacillus. Indeed, so perfect is the chemical mechanism between the manufacture of toxin by the diphtheria bacilli on the one hand and its union with the specific antitoxin to form a physiologically inert substance on the other, that such a union has led to a most promising method for the differentiating of certain organisms whose morphology, cultural characteristics, and pathogenicity to animals might otherwise lead to their classification as true diphtheria bacilli. Against these organisms diphtheria antitoxin is neither protective nor curative, and according to Hamilton (*Journal of Infectious Diseases,* vol. 1, No. 4, 1904) is distinctly deleterious, animals so treated dying sooner than those without antitoxin.

Since the promulgation of the theories of Ehrlich, Morgenroth, and their school, bacteriology has received a distinctly chemical impetus, resulting in the accumulation of a great mass of facts tending to show that specific organisms produce specific substances characteristic of their especial species, and that these compounds are neutralized by other substances produced by the living host under the stimulus of the presence of the life products of the specific bacteria.

The deeper our insight into this most complicated chemical problem the more fully are we led to believe in the individuality of the organisms responsible for infectious diseases, and each step forward in the preparation and administration of antitoxins would seem to show that their

greatest efficacy waits upon an absolute similarity between the organism producing the disease and that furnishing the antitoxin which is to cure it.

THE USE OF SPECIFIC PRODUCTS OF TUBERCLE BACILLI IN THE TREATMENT OF TUBERCULOSIS.

By James Sawyer, M.D.,
Asheville, N. C.

Judging from the reports we read in the current literature, the clinical results of the treatment of tuberculosis have materially improved during the last fifteen years. Several factors have undoubtedly been operative in causing the difference between periods prior to 1890 and those of more recent years; and the greater interest on the part of the medical profession, the gradual conviction with many that the disease is, in fact, a curable one, has, no doubt, had an appreciable share by leading to more painstaking methods in details in whatever plan of treatment is adopted.

The methods and remedies employed have been numerous. However, the hygienic and dietetic management, under which is included the so-called "open-air" treatment, and the climatic treatment have long occupied the first place; but it is only in the general appreciation of their value that the profession is practically agreed, for the details of their application are frequently a matter of controversy, even now after about two thousand years since physicians first resorted to these methods. There is hardly a drug or physical agency that has not been advocated for the cure of phthisis in the course of these many centuries, and most of them were rediscovered and claimed to be curative during the century recently closed.

This unrest and constant search for new and more effective curative agents indicates in an unmistakable manner that, although valuable, the dietetic and hygienic method alone leads to frequent disappointments. Especially is this evident in the meager percentage of enduring cures which have been shown in the various reports from private practice, public hospitals, and special institutions.

There is therefore no wonder that Koch's tuberculin, when given to the profession in 1890, caused the sensation it did, coming from an authority so great, and the one that, a few years before, had finally and permanently settled the cause of tuberculosis by the discovery of the tubercle bacillus.

The optimism engendered by this discovery, and the disappointment which followed when it was found to fail in curing all stages and phases of consumption, will for a long time remain an incident in the history of medicine, as well as a warning to future generations of physicians for thoughtful consideration, patient and personal investigations of any new proposition in therapeutics, before it is universally applied, or absolutely condemned; for Koch's tuberculin was evidently deserving of neither of these attitudes. Its diagnostic value became quickly evident, and was so strikingly manifest that it really had but few serious opponents. It is now generally accepted as the most sensitive and reliable agent in diagnosis where a differentiation between tuberculosis and some other affection comes up for consideration.

The therapeutic value of tuberculin has been, and is still, disputed, but the clinical results in the hands of those experienced in its use still speak unmistakably in its favor, although its strongest advocates had to admit its dangers, against which no amount of precaution seemed to afford absolute protection.

The scope of my paper does not allow me to follow this most interesting subject in chronological order, in which I might show the favorable and shadow sides of the old tuberculin, and the various attempts to improve the remedy, or to produce modifications that should be free from its disadvantages.

The later products of Professor Koch had more particularly in view the production of bacterial immunity, while an antitoxic effect was sought by Maragliano and others in a serum from animals previously treated with toxins of the tubercle bacillus. For the former purpose tuberculin R and tuberculin O were given to the profession in 1897, and soon thereafter a tubercle bacillus emulsion was placed upon the market in Germany, while in this country the watery extract of tubercle bacilli was introduced, with the same end in view. These prepara-

tions are not products of the culture fluid, but represent the bodies of the bacillus itself; the several preparations by Professor Koch containing the bodies of the tubercle bacilli in a state of fine division, while the tubercle bacilli extract, as made by Dr. K. von Ruck, contains the proteins after their extraction from the ground-up tubercle bacilli, with water.

It is with the latter preparation that I have sought to augment and improve my clinical results, and adhering strictly to the recommended selection of cases, I have thus far treated only those which had not reached the stage of the disease that is usually designated as phthisis—a fact which explains the comparatively small number which I am able to report upon, the majority of cases coming to Asheville having more advanced lesions.

Before, however, speaking of my results, I anticipate the frequently made objection that the class of cases under consideration also show good results without specific treatment, and that recoveries in this stage do not necessarily prove the relation of the result to the specific remedy employed.

In regard to such an attitude I shall simply point out that cases which have been known to recover spontaneously, without dietetic and hygienic advantages, or sometimes even under very unfavorable conditions, also belong, as a rule, to the early stages of pure tuberculosis, and that we could urge their recoveries in opposition to hygienic and dietetic methods with equal force. Therefore, under the circumstances, it is a matter of importance to determine what method, or combination of methods, will produce the best results in this class of cases, and likewise to exercise great care that we accept no case as a cure in which the disease has but assumed a stage of latency with absence of symptoms for the time being. For an accurate differentiation between latency and a cure we have but one sovereign diagnostic agent, and that is tuberculin, and next in importance is the absence of physical signs in the involved lung area. Since the class of cases under consideration are still free from destructive local changes, and have therefore as a rule no bacillary sputum, the diagnosis before treatment must also have been assured, either by preceding clinical course and presence of diagnostic physical signs, or in instances of doubt by a positive reaction to the tuberculin test.

To save repetition, I will state here that the diagnosis of the cases presently to be mentioned has been assured in this manner in every instance, and that with the exception of but one case the physical signs of the disease have completely disappeared, that there was an entire absence of all subjective symptoms and return of good general health, and in several of the cases I have also had the opportunity of applying the tuberculin test, to which no general or local reaction occurred. Moreover, there has been no relapse in any case in which the treatment was continued long enough to warrant me in the discharge of the patient. This latter point I consider especially important in cases that have been discharged several years ago, particularly when the patient returned to the locality, occupation, and environment that had obtained under which the disease was contracted or had developed.

Proceeding now to the cases treated, I regret to have had the common experience which obtains when we treat patients at a distance from their homes, namely, that they often discontinue treatment at a period when a recovery, although in sight, has nevertheless not been obtained. Of such cases I have treated eleven with the watery extract of tubercle bacilli, for periods varying between one and three months. In every instance, however, more or less marked improvement, both locally in the affected lung area and as a rule in the general condition, was evident, the latter at times being of a degree that caused the patient to believe himself justified in discontinuing treatment. The degree of such improvement stood in relation to the time of treatment, and the doses that had been reached.

In fourteen other cases I have, however, been able to complete the treatment, and referring again to what I have said heretofore, as to the diagnosis and conditions on discharge, I mention them with a few details.

Case I.—G. W., female, aged nineteen. General appearance good, slight anemia, and fairly well nourished. Temperature 98° to 99.8°, pulse 86 to 94. Some cough and expectoration; in the

latter a few tubercle bacilli were found. Slight loss in weight. Physical examination revealed slight dulness in the left apex with rough breathing, also crepitant and moist râles. She was treated with watery extract from May 2 to August 30, 1898, when no further evidence of tuberculosis could be found, the physical signs having disappeared and general health restored; she was therefore discharged as cured. She went home to Florida, was afterward married, and has children. When last heard from, about a year ago, she was in perfect health.

CASE II.—W. J. N., male, aged thirty-seven. Emaciated and anemic. Temperature 99.3° to 104°, pulse 96 to 110; frequent hacking cough, but no tubercle bacilli in sputum. Physical examination showed marked consolidation of right upper lobe, weak respiration, and some moist râles in the apex, while below the clavicle and along the anterior border the inspiration was harsh and expiration prolonged. He was treated with the watery extract from October 8, 1899, to March 3, 1900. At this time all physical signs had disappeared, his physical condition was excellent, and after his discharge he returned to his former home and resumed his occupation. I saw this patient this spring, and he had continued in perfect health.

CASE III.—F. H. F., male, aged twenty-one. Mr. F. came under my care May 21, 1900, with a temperature of 104°, pulse 160, suffering from an acute pleurisy with effusion of the left side. After recovery from this, slight consolidation in the upper lobe, on the same side, was found. To assure the diagnosis a tuberculin test was now made, to which he gave a decided general and local reaction. Under treatment with the watery extract the dulness spoken of disappeared, and he was discharged September 21, 1900, in apparently perfect health. In a recent letter this patient writes that he has followed his occupation ever since, and that his health is good in all respects.

CASE IV.—K. B., male, aged twenty-four. Somewhat anemic, of pale, ashy color; had lost weight. Temperature 100.4°, pulse 80 to 90, moderate cough, slight expectoration, no tubercle bacilli in sputum. Physical examination showed both upper lobes somewhat consolidated, respiration weak, and a few crepitant râles were noted. Tuberculin reaction was positive. Patient was under treatment in the summer of 1892 for three and one-half months, when he was discharged as cured. His brother, a physician, writes me that he is still in perfect health.

CASE V.—R. B. M., female, aged thirty-six. Appearance and color fairly good. Temperature 99.5°, pulse 82 to 94. Complained of cough, slight expectoration, and loss in weight. Sputum did not contain any tubercle bacilli, but physical examination showed involvement of the left upper lobe and slight consolidation, with the usual auscultatory phenomena. She reacted to the tuberculin test, and was treated from October 3, 1900, to March 28, 1901, and then discharged with the disappearance of all local signs, and restoration of general health.

CASE VI.—R. I. K., female, aged thirty-one. Anemic, had lost steadily in weight and strength. Had a dry cough, and a moderate amount of expectoration, in which tubercle bacilli were present. Temperature 102°, pulse 100. Upper left lobe involved, marked dulness, weak respiration, with moist and crepitant râles. Patient was treated from October 28, 1902, to March 5, 1903. Her improvement was gradual but steady, and on her discharge all physical signs had disappeared and her general health was restored.

CASE VII.—N. D., female, aged twenty-three. Came under my care June 7, 1902, after an attack of bronchopneumonia with pleurisy. She showed slight rises of temperature, and had a slight cough. There being no expectoration, a tuberculin test was made, to which she reacted. She was treated with watery extract, and discharged September 27, 1902, with all the local physical signs cleared up and general health restored.

CASE VIII.—A. R. J., female, aged twenty-nine. General condition still good, but had lost in weight and strength. Temperature 99.6°, pulse 80 to 90. Moderate dry cough, and a small amount of expectoration, in which a few tubercle bacilli were found. Left apex and a small area to the right of the sternum showed percussion dulness, weak respiration, with crepitation on the left side, while moist

râles and rough inspiration were present in the area of the right side. Watery extract was given from February 11 to June 19, 1903. The tubercle bacilli and the expectoration had disappeared, the physical signs had all cleared up, and general condition improved, justifying the acceptance of a complete recovery, which was later confirmed by failure to react to the tuberculin test.

CASE IX.—E. W. H., female, aged thirty-three. General appearance good, somewhat pale; temperature 100.2°; pulse good, but a little rapid, from 85 to 98. Moderate cough, some expectoration, but no tubercle bacilli found. Tuberculin test positive. Left apex involved. Slight percussion dulness and rough inspiration with crepitant and few moist râles below clavicle. Treatment with watery extract was employed February 3 to May 19, 1903, and at the end of this period there were no more physical signs nor subjective symptoms. I saw this patient in the summer of 1904 and applied a tuberculin test, with negative result.

CASE X.—J. H. H., female, aged thirty-seven. Patient was still in good physical condition when she came under treatment. Her affection had been diagnosed as incipient tuberculosis by the physician who referred her to me. I found slight dulness and few crepitant râles of the right apex. Tuberculin test was employed, by request, and a decided reaction was obtained. Patient was treated from March 9, and discharged on July 10, 1903, when all objective signs and subjective symptoms had disappeared. Later a tuberculin test was made, with negative results. I had a letter from this lady in the summer of 1904 saying that she was in perfect health.

CASE XI.—R. R., male, aged twenty-one. Beyond loss in weight and signs of anemia patient was in fairly good condition. Temperature 101.5°, pulse 90 per minute. Cough and profuse expectoration, but no tubercle bacilli were found. Tuberculin used by request; reaction positive. The area involved was the right upper and a part of the middle lobe, where dulness with crepitant and moist râles and rough respiration were found. The patient had suffered from chronic bronchitis for ten years, and had also chronic postnasal, pharyngeal, and laryngeal catarrh. Watery extract was used from October 9, 1903, to August 1, 1904. His improvement was slow and gradual at first, then more rapid until his discharge in the summer of 1904, when the physical signs and subjective symptoms had disappeared.

CASE XII.—A. H. S., female, aged nineteen. Patient very thin, pale, and weak. Came under my care after recovery from a very severe attack of grippe-pneumonia. Temperature 99.5°, pulse weak and rapid. She had a dry, hacking cough, with but little expectoration, in which no tubercle bacilli were found. Tuberculin test used; reaction prompt and positive. Right upper lobe was found involved to below the third rib. Her respiration was weak and attended by a few crepitant râles, with interrupted inspiration. She was treated from June 9 to October 1, 1904, at which time she had gained back her lost weight and more, her color had returned, and all her symptoms had disappeared. Physical examination showed nothing abnormal. A tuberculin test applied later proved negative.

CASE XIII.—M. P. M., female, aged twenty-three. General appearance good. Temperature 99.5°, pulse 90 to 100, slight cough, a very small amount of expectoration, and no tubercle bacilli. Right apex showed a few crepitant râles and also a few moist râles, with weak breathing. Tuberculin test gave positive reaction. Treated from January 9 to May 27, 1904, when all signs and symptoms had disappeared. Later a tuberculin test was made, and no reaction could be obtained. I saw this young lady recently, and she was still perfectly well, and another tuberculin test failed to cause any reaction.

CASE XIV.—M. A. S., female, aged twenty-three. Patient consulted me on account of throat trouble, and routine examination showed that the right upper and the upper part of the middle lobes were the seat of structural alterations. Patient gave a history of two attacks of pneumonia. She practically had neither cough nor expectoration, and in what she could supply of the latter no tubercle bacilli could be found. Temperature 99.4°, pulse good and generally about 80. Physical examination showed slight dulness in the right apex, weak respiration, and a few crepitant râles. The tuberculin test

was given and a positive reaction obtained. Treatment with the watery extract was begun on July 27, and continued to the present date (October 17, 1904). All physical signs have practically disappeared. The patient is now practically well, but I am still keeping her under observation, and expect to apply the tuberculin test before her final discharge. [N. B.—This patient was discharged December 29, 1904, after failing to react to the tuberculin test.]

You will note that I have not a single failure to record in the cases in which I had opportunity given me to actually complete the treatment; and I attribute this to the careful manner in which these cases were selected. Furthermore, I do not hesitate to express my belief that in most of those cases where the treatment was prematurely discontinued the then recorded improvement could easily have become actual and lasting cures.

I have no doubt that my results would have included failures of a more or less striking kind had I accepted advanced cases of phthisis, in which the adverse clinical course is so largely determined by complicating factors secondary to or entirely apart from tuberculosis.

My purpose in the first place was, however, to test and carefully study the action of the remedy in a stage of the disease where we have reason to believe its favorable action may become manifest, if such it has, and while the number of cases is comparatively small, the years of observation correspondingly limited, I nevertheless believe that the results are permanent.

For comparison with these results I have records of other patients who came under my care in equally favorable condition, and who were treated in all respects similarly, excepting that the specific remedy was omitted. In many of these cases I have seen subsidence of symptoms and gain in weight and strength which were gratifying to myself and the patients alike; but I have also observed advancing processes and the advent of confirmed phthisis in spite of much longer continued dietetic and hygienic efforts in connection with climatic treatment. Moreover, in the most satisfactory cases the physical signs did not disappear completely, and while the catarrhal signs often subsided, percussion changes previously present were but slightly, or not at all, modified on discharge.

In some of these cases a tuberculin test was made at the end of the treatment, and almost invariably with the disappointment of a reaction following a small dose, showing that an actual cure had not been obtained, a fact which explains the frequent relapses of apparently cured patients when they leave the climatic resort for their home and resume their previous environment and occupation.

While I have not been able to apply a tuberculin test in all my cases discharged after treatment with watery extract of tubercle bacilli, in at least half of them the test was applied after a sufficient interval from the discontinuance of the remedy that the question of toleration acquired from a similar bacterial product was practically eliminated, and invariably without effect, although decided doses were used.

In other cases, where the test could not be applied by reason of distant residence, my information as to their continuance in good health justifies me in the belief that the results obtained will prove permanent.

For the present I feel justified in considering all of these fourteen cases to have made a satisfactory recovery, and I will only add that I have seen no undesirable complications or disagreeable incidents that could be attributed to the remedy; and likewise that the tuberculin test, whenever I have applied it, proved reliable and without harm to my patients.

INTESTINAL PERFORATION IN TYPHOID FEVER.

By Frank C. Wright, M.D.,
Grove City, Ohio.

The diagnosis of perforation of the intestine in typhoid fever is rather difficult—in fact, in some cases, it is impossible by the most skilled diagnosticians.

Take the pictures drawn by the different competent observers, and they differ materially in almost all instances. This in a measure is due to the difference in time at which the case is seen, and as Davis says, "It is my opinion that the

symptomatology of typhoid perforation, as given in our text-books, is often more nearly the symptomatology of general peritonitis than of mere perforation." The difference in the general condition of the patient at the time when perforation takes place, the difference in facilities for accurate observation among different reporters, and with the same reporters in different cases, and the rarity of the condition, making it unusual for any one observer to see a large number of cases, are all contributing causes to this condition of affairs.

I was impressed with the small amount of literature, and with the difficulty encountered when one attempted to get a fairly accurate clinical picture from any one paper upon the subject. This has been the incentive to my presenting an analysis of as much of the literature as was available to me. Collectively it makes a fairly accurate guide to the diagnosis.

This complication, prior to the advent of laparotomy in its treatment, according to Osler, was the cause of one-third of all deaths from typhoid fever, and it occurs in two per cent of all cases of the disease. As is well known, it is produced by the extension of a typhoid ulcer completely through the walls of the intestine. It is found, usually, in the lower part of the ileum. Harte and Ashurst say that, in 73 per cent of all cases, it occurs within 12 inches of the ileocæcal valve, and in 190 cases collected from the literature, in only 4 was it situated more than three feet distant.

The accident occurs most commonly late in the disease, about the third or fourth week. It is thought to be more common in males, and to be rare in childhood, though Elsberg says that perforation is nearly as common between the ages of six and fifteen years as it is in adults; however, it is almost unknown in infancy. It seems to take place most frequently in the cases in which diarrhea, meteorism, and hemorrhage have been conspicuous symptoms, though this is not the invariable rule, for it does occur in the mild or ambulatory forms of the disease, and in the cases in which constipation has predominated.

The accident takes place most commonly without apparent cause, though it is believed by some to be almost invariably preceded by some error in diet, or muscular exertion, such as coughing, straining at stool, or violent fits of vomiting.

Usually the patient is suddenly seized with acute agonizing pain referred to the lower abdomen or umbilicus, more commonly to the right of the median line, and below the level of the umbilicus, localized and spreading tenderness, and abdominal rigidity. A sudden change in pulse and temperature is noted, and nausea and vomiting may be present. The patient may have a chill, the respiration may be embarrassed, and he may possibly have syncopal attacks.

Unfortunately this frank announcement is not the invariable rule, and, in fact, it seems exceptional to meet with a case in which these symptoms are all present.

Pain, sudden and severe, on the whole seems to be the symptom most commonly and constantly present, though even this is sometimes absent. Haggard in collecting statistics of 300 operated cases says: "As a rule, pain is the first note of alarm; pain, sudden, severe, and colicky." This pain is usually located in the umbilical region, or below the level of the umbilicus, and frequently in the lower right quadrant of the abdomen. Sudden increase of pain already present is considered of equal importance.

J. C. Wilson: "The most important symptom is the sudden onset of severe abdominal pain."

Biggs: "Abdominal pain is the most important symptom, when present."

Butler: "Seventy-five per cent of all cases are announced by the sudden onset of acute abdominal pain, with rigidity and abdominal tenderness."

Finley: "The most constant and characteristic sign is sudden severe abdominal pain, persisting with increasing intensity."

Tenderness, localized and rapidly spreading, and usually manifested in the lower right quadrant of the abdomen, is considered by many of more importance than pain.

Biggs says: "Spreading tenderness is a little more to be relied upon than spreading pain."

Davis: "Still more to be relied upon than pain is fixed local tenderness."

Abdominal Rigidity.—This is an inval-

uable sign when present, and can usually be made out, if carefully sought for.

Munroe: "To get this sign rightly interpreted is the key-note to the diagnosis." Osler attaches much importance to it, and Biggs says: "Of all the early physical signs, muscular rigidity is the most important." Davis says: "A sign of great value, and I believe almost always present in the region of the perforation."

Shock.—Here again we find much difference of opinion; it is probably pronounced in the majority of cases at some time. J. B. Murphy says: "The prevalent idea that perforation is characterized by the combination of symptoms included under the term collapse is erroneous. At present the diagnosis is based upon the symptoms, nausea and vomiting, localized tenderness, and circumscribed flatness upon piano percussion, elevation of temperature, and hyperleucocytosis, in the order mentioned." He further says: "I have taught for years that there is very little depression immediately following perforation, and no collapse. Collapse is a late manifestation, and is the expression of the absorption of the products of infection."

But in consulting the literature we find expressions like the following very prevalent:

J. F. Erdman: "The principal question seems to be whether we should wait six or twelve hours for the subsidence of shock before operating."

J. E. Graham: "The operation should be performed as early as possible after the subsidence of shock."

Platt: "Defer the operation until primary shock, which usually lasts only a few hours, has passed away."

Butler, as quoted above, says that "75 per cent of all cases are announced by sudden acute abdominal pain, rigidity, rapid pulse, and a marked condition of collapse;" and Biggs says: "The sensations associated with shock are of considerable importance when present; their absence may be disregarded."

Temperature.—Many observers think that a sudden fall of temperature to normal or subnormal heralds the event, while as many more think that a sudden rise is characteristic. A rapid fall, incident to the shock, followed by a reactionary rise as a result of the absorption of toxic material, and remaining high as a consequence of the peritonitis, is probably what really occurs. Differences in the time of observation would naturally lead to different conclusions were not the trouble viewed in this light. Davis says: "Apparently this (a fall in temperature) is not always present, though a subnormal temperature was noted in two of my cases. I am convinced that, if looked for at the proper time, a small reduction of temperature would be found in most cases. If the patient is not too ill there is also a feeling of anxiety, or of some impending calamity, often eloquently expressed in the countenance."

The safest rule to follow is a sudden change in temperature, out of proportion to the pulse. Dieulafoy regards this as an almost invariable sign, and Hall says: "A subnormal temperature, or a temperature disproportionate to the pulse, is our most important guide."

Pulse.—Biggs says: "The pulse is of great importance; it is, of course, an evidence of systemic shock. Almost always a rise in pulse-rate is noted, the onset is sudden, the quality altered, tension reduced, and it is readily compressible."

We must conclude that any change in the pulse-rate or quality, in typhoid fever, is of great importance, and especially so is a great disproportion in the pulse and temperature.

Vorsanger reports a case in which the only symptoms were a rise in pulse-rate and tympanites.

Respiration.—This function is interfered with in the beginning by pain and shock, later by the accumulation of pus and flatus, and at least by the exhaustion from prolonged toxemia.

Nausea and Vomiting.—J. B. Murphy places this symptom in second position, giving pain first. Munro attaches much importance to it, and Wilson gives it second place, while Biggs says that nausea and vomiting are so rare as to be of little value as a diagnostic sign. Davis says that this is more often the ushering in of general peritonitis than a sign of perforation.

Distention.—To determine that gas is free in the abdominal cavity, outside of the intestine, is proof positive that perforation has taken place. The sudden development of tympany, with absence of

liver dulness, caused as it is by flatus in the abdominal cavity, is a sign of great importance. But Davis says in this connection: "Absence of liver dulness is not a frequent phenomenon, and when it occurs may be due to other causes than perforation, as by the pushing up of the liver by the coils of distended intestines."

Biggs says that "distention and tympany are not of any importance as regards perforation *per se*, but are the evidence of the consequent peritonitis." Butler says: "If preëxisting tympany is great and the general condition bad, the occurrence of perforation may be very difficult to determine."

Syncope.—This symptom is rare, usually occurring in hemorrhagic cases, and is rather a symptom of severe hemorrhage than of perforation.

Chills and rigors are more frequent, and when present are very early manifestations.

The Skin.—The condition of the skin will depend largely upon the condition of shock, probably cold and wet in most cases.

Hyperleucocytosis becomes a valuable sign, when the blood count has been made at frequent intervals; it is consequently of most value in hospital practice, where facilities for frequent blood examinations are always present. Typhoid fever being a disease of low leucocytosis, the rise in leucocytes, incident to any peritoneal disturbance, makes the sign one of value in perforation.

Cabot says: "It is probable that slight local peritonitis always produces leucocytosis, unless the individual is already in a condition of profound general septicemia; on the other hand a sudden (general) infection of the general peritoneum, with large quantities of excessively malignant organisms, may often result in complete absence of leucocytosis, or only a relatively slight rise, followed later by a fall."

Unless the diagnosis be much obscured, this sign will rarely be more than a matter of record. Hays says: "This much vaunted symptom is probably the least valuable of all;" and Harte: "The leucocyte count has proven of very little value at the time when most needed."

It may, however, prove a very valuable means of clinching an otherwise doubtful diagnosis.

Blood-pressure.—Dr. Crile brought forward the fact that blood-pressure is very materially influenced by perforation. Measured with a Riva-Rocci instrument, the blood-pressure averages were taken in a series of cases of typhoid fever in the different stages of the disease, and were found to be as follows: Highest, 138 millimeters; lowest, 74 millimeters. Averages—First week, 115 millimeters; second week, 106 millimeters; third week, 102 millimeters; fourth week, 96 millimeters; fifth week, 98 millimeters; mean, 104 millimeters.

In twenty cases of perforation examined the blood-pressure was found to be: Highest, 208 millimeters; lowest, 156 millimeters.

In Lakeside Hospital, in a case of slow-forming perforation, the blood-pressure rose in two hours from 116 millimeters to 165 millimeters, and the pulse was but slightly increased.

This symptom is also one which is only available in cases in which facilities for blood-pressure examinations are at hand, and is of most value in cases in which the blood-pressure prior to perforation is known.

Hemorrhagic Cases.—In this condition the diagnosis becomes very difficult. All of the symptoms of hemorrhage, with the possible exception of air-hunger and excessive thirst, are included in the symptomatology of perforation. With a comatose patient, or one in whom hemorrhage has not been severe, these symptoms would not be conspicuous.

Hemorrhage takes place simultaneously with perforation many times, and the classical administration of opium for hemorrhage often robs the patient of his chance for early operation, by delaying the appearance of the very signs upon which most dependence is placed, viz., pain, tenderness, shock, and sense of impending calamity. The patient's sensibilities are obtunded more or less, and when he does return to complete consciousness the picture is one of general peritonitis and the condition hopeless. I recently had this matter brought home to me most forcibly—a patient dying in seven hours after the first appearance of pain, and four hours after the slightest rigidity could be made out. Thirty-six hours prior to the appearance of pain the patient received ¼ grain of morphine for intestinal

hemorrhage. The temptation to give the drug is great, for the patient is in an alarming condition, or more accurately speaking, in an alarmed condition, and as Dr. Hare aptly says, "there are few conditions met with by the general practitioner so far beyond his ability to be of any real assistance as intestinal hemorrhage in typhoid fever." Morphine tranquillizes the patient, steadies the heart, and stops peristalsis, and its use would be rational were we absolutely certain that perforation was not impending or had not really taken place. Who to-day is expert enough in diagnosis to determine the difference, and who can say with any degree of certainty that perforation is not impending in any given case, at least until after the time for the usefulness of morphine has passed away?

With regard to other drugs in the treatment of hemorrhage, our leading therapeutists to-day have very little faith in their use.

Hare says: "I do not see why a bleeding vessel in the intestine should be regarded differently from a bleeding vessel in a man's leg. No one to-day would think of applying a turpentine stupe, or giving turpentine internally, or adrenal gland, or similar styptic, by the mouth to control a hemorrhage from the anterior tibial artery. I fail to see how any of these remedies, even if possessed of styptic properties, when brought in contact with the bleeding spot, can be of use, when they have to pass through many feet of stomach and intestine."

We have this fact always before us, that death from intestinal hemorrhage is a rare occurrence.

Every case of intestinal hemorrhage should be treated as one of possible perforation until time has eliminated all doubt.

Contraindication to the use of morphine is certainly as great as it is in suspected appendicitis; certainly no one to-day would give a patient morphine in whom he suspected an acute inflammation of the appendix, and prior to his absolute diagnosis.

In a condition in which immediate operation is the patient's only hope, and with his chances inversely as to the amount of time elapsing between the accident and the operation, and when no symptom is constantly present, and with our most competent diagnosticians disagreeing as to the relative value of the signs and symptoms when they do appear, it seems to me that one should be very careful indeed not to give a drug which might delay their appearance even for an hour, as that hour may cost the patient his life.

To recapitulate, given a case of typhoid fever, a sudden change of temperature and pulse, a sudden increase in abdominal symptoms, pain, meteorism, and abdominal rigidity in some local region of the abdomen, an immediate preparation for operation should be made.

A chill in the course of typhoid fever will call for not only a careful examination of the chest, but also of the abdomen.

Temperature and rigidity afford our greatest key to the differential diagnosis of hemorrhage and perforation. The usual happening in hemorrhage is a fall in temperature, with a gradual rise to not quite its former level; the temperature many times never again quite attains its former level. While in perforation an immediate fall is noted, followed by a rise to much above its former level, and this high temperature is maintained.

Intestinal hemorrhage is not to be too officiously treated, as the vast majority of cases will recover if left to nature. Assistance that cannot do harm, in the way of position of the patient, elevating the foot of the bed, withdrawal of nourishment and drink, allowing small pellets of ice, an ice poultice to the abdomen, etc., are indicated.

External heat may be called for, and stimulants given hypodermically; atropine will probably meet the indications most usually found, but strychnine and digitalis may be called for by a failing heart. Adrenal extract also appeals to one in this connection; intravenous injection of normal salt solution may also do good service in desperate cases—that is, where the patient is exsanguinated and gasping for breath.

Sterile gelatin solutions or calcium chloride may prove of service, and they are certainly the only rational remedies for internal hemorrhage at our command.

Every move should be deliberate and designed to allay the patient's fear. While pursuing such a course a careful watch

should be kept on the pulse, temperature, and abdominal symptoms, and the vast majority of cases of hemorrhage will recover, and at the same time perforation will usually be recognized in time for operative interference.

CRYPTOGENETIC SEPTICOPYEMIA, WITH A REPORT OF THREE CASES.

By Julius L. Salinger, M.D.,
Physician to the Philadelphia Hospital,
and
Georgianna Walters, M.D.

Sepsis from the standpoint of the internal clinician is of comparatively recent origin. For a long time it has been recognized as an affection belonging almost exclusively to the surgeon and the obstetrician. Medical sepsis owes its recognition largely to the development of the science of bacteriology. Only with advance in the study of pathogenic organisms, their mode of entrance into the body, and their behavior, has it been possible to explain a certain symptom-complex which has been for the most part very puzzling to the practitioner. Thus, clinical pictures have been noted which bear a close resemblance to acute rheumatic fever, to miliary tuberculosis, to enteric fever, and to wound infection without the presence of a demonstrable lesion. The proof of Fehleisen that erysipelas is a streptococcus infection was probably one of the first links in the chain of medical sepsis. As clinical conditions were frequently noted which were closely akin to wound infections, in which, however, it was impossible to find an injury or wound, v. Leube in 1878 originated the term cryptogenetic septicopyemia. Septicopyemia was meant to cover a class of infections that bear resemblance to both septicemia and pyemia, in which symptoms of both are closely intermingled. In our present state of knowledge it is impossible to maintain the old conceptions of pure septicemia and pyemia. Gaspard in 1822 was probably the first to experiment with purulent and putrid infections. His results were confirmed a little later by Trousseau, Dupuy, Leuret, and in 1880 Pasteur demonstrated the common causes of septic infections.

That the conception of medical sepsis is by no means uniform even yet is proven by the fact that in very few modern textbooks upon the practice of medicine is the subject considered at all from the standpoint of internal medicine. The works of Strümpell and Leube are exceptions to this statement.

The microörganisms commonly found in septicopyemia are streptococci, staphylococci, and pneumococci, less frequently colon bacilli, the proteus, and the pneumobacillus of Friedländer.

The affection which is probably most often confounded with septicopyemia or medical sepsis is acute articular rheumatism. It is not unusual for the careless practitioner to find a patient who complains of pain in or near a joint, in which there may be even some arthritic swelling and fever, possibly with pericarditis or endocarditis as complications, and to speedily make a diagnosis of acute rheumatic fever. When, however, antirheumatic drugs are administered, particularly the salicylates, and cinchonism occurs and the condition is not improved, the practitioner frequently reports a case of anomalous acute rheumatic fever. These are, however, particularly the symptoms which are found in medical sepsis, as is illustrated by the report of the following cases:

Case I.—Montello S., aged nineteen, a negro, bootblack by trade, born in Washington, D. C., was admitted to the Philadelphia Hospital March 21, 1904.

Family history: Father died of dropsy; mother, brothers, and sisters are living and well.

Past medical history: Had whooping-cough, measles, and malaria in childhood; gonorrhea five years ago; articular rheumatism (?), which prevented his walking, three years ago. No history of syphilis. Patient used alcohol and tobacco moderately.

Present illness: Two weeks prior to admission pain and swelling were noticed in the left knee, followed by a similar condition in the right knee, and one week later he was treated for "rheumatism" in the wrists. At time of admission patient complained of tender, swollen ankles, slight cough, and painful respiration.

Physical examination: Fairly well nourished. Tongue fissured, coated, and flabby. Lungs resonant throughout. Apex beat in fifth interspace within the

left nipple line; heart action regular; a soft mitral systolic murmur, not transmitted. Abdomen negative except for tenderness in the splenic region. Tenderness upon pressure over the long bones. Ankles swollen and painful.

March 22 to 28. Patient had considerable pain in ankles. Heart murmur audible. Salicylate of sodium in large doses without effect.

March 29. Intense pain in left shoulder; dyspnea and pain on movement of body. Impaired resonance over base of left lung and numerous fine râles. Systolic murmur is inaudible. A pericardial to-and-fro friction sound can be felt and heard under the right border of the sternum below the third rib, above the fifth rib, and one inch outside the left nipple line. Spleen slightly enlarged upon palpation.

April 7. Intense pain beneath the right axilla; resonance somewhat impaired; friction remains, but is less distinct. Superficial bed-sores over buttocks and thighs. Patient complains of pain on movement. Area of heart dulness increased to right one-half inch.

April 15. Friction rub is maintained on deep pressure of the stethoscope. Mitral murmur present and faintly transmitted to the axilla.

April 22. Complains of pain and tenderness in the shoulders and arms. Heart action regular; systolic murmur very distinct. No pericardial friction. Impulse can be felt and seen in the fifth interspace within the nipple line, over an area between the fifth and sixth ribs within the nipple line.

May 1. General and local conditions have improved.

May 10. Out of bed. On full diet.

May 14. Impulse in the fifth and sixth interspaces a little to the left of the parasternal line still forcible; has no thrill. Percussion in line of nipple transversely reaches to the right sternal border. Loud systolic murmur heard plainly in the axilla and transmitted to the angle of the left scapula. Slight accentuation of second aortic sound and a feeble hemic murmur in pulmonic area. Spleen not enlarged to percussion. Patient discharged in good general condition.

Examination of eye-ground April 15 by Dr. Wm. M. Sweet: Both irises react to light. Retinal veins full but not tortuous. Arteries normal. No arterial or venous pulsation. Nerve heads oval. Free from astigmatism. Eye-grounds normal.

Urinalysis: March 25, specific gravity 1022; acid; pale yellow; albumin and sugar absent; no excess of uric acid salts noted. March 30, specific gravity 1020; acid; dark; albumin abundant; sugar negative; no casts found upon microscopic examination.

Sputum examination: The bacillus of Friedländer—the pneumobacillus (mucosus capsulatus)—present.

Hematological analysis: Erythrocytes average 4,342,500; hemoglobin, 75 per cent; leucocytes, 18,100. March 29, leucocytes number 26,800; highest amount of hemoglobin, 85 per cent. April 23, highest erythrocyte count 5,060,000.

The lowest leucocyte count was 14,000, April 23.

The differential counts averaged as follows: Polymorphonuclears, 66½ per cent; small lymphocytes, 19 per cent; large lymphocytes, 11.75 per cent; eosinophiles, 2½ per cent; basophiles, .25 per cent.

The diagnosis in this case, then, according to the clinical evidence, was sepsis due to the pneumobacillus of Friedländer.

About April 1 a blood culture was ordered. The report of the director of the Bacteriologic Laboratory of the Philadelphia Hospital, Dr. Randle C. Rosenberger, was as follows: "Two cubic centimeters of blood were withdrawn from the central vein of the arm after properly preparing and disinfecting the member. The blood was placed in a flask containing 200 cubic centimeters of bouillon and incubated at 37° C. Spreads from this culture at the end of twenty-four hours contained a bacillus 2 to 3 microns in length, encapsulated, and decolorizing by Gram's method of staining. Subcultures in various media (gelatin, blood serum, agar, and litmus milk) gave results which correspond to those obtained with pure cultures of the bacillus of Friedländer or the pneumobacillus."

As the pathogenic agent of a septic general infection the pneumobacillus, according to Lenhartz,[1] has been found only in seven cases. According to this same writer, in two of the cases an acute bronchopneumonia was the underlying

condition. In the remainder a purulent otitis was the primary cause.

In the case quoted by Lenhartz the diplococcus of Friedländer was also found in the blood. His case terminated lethally.

CASE II.—Nora C., aged thirty-five, negress, born in South Carolina, was admitted to the Philadelphia Hospital May 6, 1904.

Family history: Mother died of heart disease; husband has a psoas abscess.

Past medical history: At fourteen she had enlarged glands of the neck; since then rheumatism, and frequent "colds" during the winter. Two weeks previous to admission patient had cough, night sweats, and occasionally expectorated blood. She lost in flesh and strength and had diarrhea. One week later she had high fever, headache, with increasing weakness.

Physical examination: A poorly nourished, weak woman. Tongue coated; pulse regular, but soft; chest greatly emaciated, expansion slight. Postcervical glands enlarged. Signs of consolidation at the right apex. Increased tactile and vocal fremitus above the second rib with dulness and prolonged expiration. Patient has cough and mucopurulent expectoration. Skin and hair are dry. Extremities wasted. Fingers show tendency to clubbing. Vaginal examination negative, except for slight tenderness in ovarian regions. Uterus is freely movable. Patient complains of weakness, loss of appetite, and fever.

May 12. The entire right leg markedly swollen, somewhat edematous; tender beneath the knee. Measurements are as follows: Right thigh, middle, 24 inches; left thigh, middle, 14½ inches; right leg, middle, 15 inches; left leg, middle, 10½ inches.

Eye-ground examination by Dr. Sweet: O.S., normal eye-ground and media; O.D., normal eye-ground and media. Disks clearly outlined.

June 6. General condition improved. Swelling and pain have decreased in the right leg. Tenderness over the right tibia and femur.

June 12. Patient sitting up in bed; feeling better. Measurements as follows: Right thigh, middle, 19 inches; left thigh, middle, 15 inches; right leg, middle, 14½ inches; left leg, middle, 11 inches.

June 20. Patient discharged from hospital.

Urinalysis: Acid; contains hyaline, dark granular, and epithelial cells and pus cells.

Blood count: Erythrocytes average 1,242,500; hemoglobin, 32 per cent; leucocytes, 14,430. Leucocytosis was 24,000, May 25.

Differential count was as follows: Polymorphonuclears, 82½ per cent; small lymphocytes, 13½ per cent; large lymphocytes, 4 per cent.

Sputum examination showed neither pneumococci nor tubercle bacilli.

Blood culture (report by Dr. Rosenberger): "Five cubic centimeters of blood were obtained from the central vein of the arm, inoculated into 200 cubic centimeters of bouillon, and placed in the incubator at 37° C. At the end of twenty-four hours spreads made from the culture contained oval cocci occurring in pairs and chains, encapsulated, and staining positively by Gram's method. Morphologically, biologically, and tinctorially the organism resembled the streptococcus lanceolatus or diplococcus of pneumonia."

CASE III.—I am indebted to Dr. P. Fusco for the history of the following case, the patient having been seen by one of us (J. L. S.) in consultation:

Donote F., aged twenty-four, a barber, in June, 1901, contracted gonorrhea, which was treated by a druggist for six weeks with strong injections. After cessation of the discharge the patient went to Atlantic City, where he took seven cold sea-baths. Upon his return home he noticed that his left wrist was somewhat swollen and painful, after which the same symptoms appeared in the right wrist, then successively in the left knee-joint and the right knee-joint, and then in some of the vertebral articulations. At the end of about seven months the pains in these joints had disappeared, remaining only in both coxofemoral joints. In the spring of 1902 the joint pains appeared in both ankles, and the tendo Achillis became particularly painful. The pains increased in severity. There was some precordial distress. This condition improved, so that in December, 1903, the patient was able to resume his occupation. In the spring of 1904 the pains recurred, this time accompanied

with fever, the temperature averaging between 101° and 102° F. The pulse and respiration at this time were increased. A blood culture by Dr. Rosenberger showed the Fränkel pneumococcus in pure culture in the blood.

Although the claim has been repeatedly made that the finding of specific organisms in the blood in cases of sepsis is rare, the three cases just reported gave a positive result upon the first trial. It has been suggested by some authors, particularly by v. Jürgensen (*Deutsche Klinik,* article on Sepsis), that this negative finding is due principally to two conditions: first, that blood is not taken in sufficient amounts for examination; and secondly, that all the various culture media should be employed in endeavoring to arrive at a conclusion.

The diagnosis of sepsis from a medical standpoint presents many difficulties, differing from surgical or gynecological sepsis in the important fact that no point of entrance for the organism can usually be determined, since wounds in the great majority of cases are absent. The question then arises, how does the bacterium gain entrance to the susceptible organism? And here several explanations have been offered. It has been pointed out by many investigators that the slightest wound of the skin, or of the mucous membrane, is sufficient for the microörganism to find its way into the body and bring about its characteristic changes. The tonsils are a very common point of entrance for the microörganism. It is readily understood that a predisposition, hence a susceptible condition of the body, must be present for the entrance of these pathogenic bacteria.

The diagnosis of cryptogenetic septicopyemia may also be difficult, owing to the great similarity existing between many of the symptoms of this affection and those of acute rheumatic fever, miliary tuberculosis, enteric fever, malarial infection, and uremia. Possibly, even in some cases in which the cutaneous phenomena are marked, the question of differential diagnosis between sepsis and the acute exanthemata may arise: where the septic infection is localized in the lungs, lobar and lobular pneumonia must be considered; and finally, where nervous symptoms are prominent, apoplexy offers some striking resemblances.

There are no pathognomonic symptoms of sepsis. The diagnosis must be made from the entire symptom-complex, but there is a certain group of symptoms which are found associated, and should always lead us to suspect sepsis as the underlying condition. These symptoms refer particularly to the relation of the pulse, temperature, and respiration to the affection localized in the joints, and especially in the long, tubular bones, to the condition of the blood, to the appearance of the eye-grounds and other ocular phenomena, and to the implication of some particular organ, as the heart. By most of the modern clinicians so-called malignant endocarditis is nothing else than a form of sepsis. This has led Jürgensen to divide the affection into the following groups:

Group I, *in which the constitutional phenomena predominate.* In this group the condition is characterized by rapid decomposition and death, as in any other severe infection.

Group II, *in which the phenomena on the part of the heart predominate,* the inflammation being rarely restricted to the myocardium, endocardium, or pericardium, but all of the structures being involved—a condition designated by the author as *pancarditis.*

Group III, *in which affections of the bones and joints predominate.* This is the form which was described as primary, infectious, osseous, and periosteal inflammation, or bone and joint typhoid. Metastatic articular inflammation is common in this form. This is also the group which is commonly confounded with acute articular rheumatism.

Group IV, *in which inflammatory conditions of the skin and subcutaneous connective tissue, of the muscles, of the mucous membrane, and of the serous membrane predominate.*

Group V, *in which inflammations of internal organs predominate:* brain, lungs, kidneys, spleen, liver, stomach and intestines.

It must be mentioned in the beginning that intermingling of these groups is very common, so that there are forms of sepsis which may present symptoms of all the groups.

The relation of the temperature to pulse and respiration, as has been remarked, is particularly important, the

main facts being these: that the respiration-rate and the pulse-rate are out of all proportion to the height of the temperature. The temperature curve itself shows no constancy. It may be subcontinuous, remittent, or intermittent, and the so-called "pump-handle" temperature of surgical sepsis is by no means invariable in the cryptogenetic form.

Of great importance in the diagnosis is the condition of the blood. Aside from the discovery of the particular microorganism of the blood, the relation of the fluid and solid constituents to one another is of importance. It may be said in general that a secondary anemia is usually present, the hemoglobin for the most part is decreased, the erythrocytes being diminished. As a rule leucocytosis is present, this being for the most part a polymorphonuclear leucocytosis. The absence of leucocytosis by no means excludes sepsis, for, according to Grawitz,[2] even in some of the severest cases of suppuration in internal organs leucocytosis is absent.

Hemorrhages from the tissues and from the internal organs are not of rare occurrence; and among these enterorrhagia is perhaps most common. This symptom is of value in the differential diagnosis between enteric fever and sepsis, for the typhoid form of sepsis with hemorrhages from the bowels may very closely simulate true enteric fever.

The examination of the eye-ground is of particular importance. This was accurately studied by Litten and J. Michel.[3] Retinal hemorrhages are especially frequent; occasionally also unilateral and even bilateral panophthalmitis.

The condition of the bones and joints is significant. As a rule sepsis limits itself to one or more large joints, or the joint itself may remain unaffected, while the bones entering into the formation of the joint are particularly sensitive to pressure. The joint implication is of a more permanent character than in ordinary acute rheumatic fever, and the symmetry which is an almost constant accompaniment of the latter disease is lacking. The muscles are less frequently attacked. Nervous phenomena are common, such as insomnia, headache, vertigo, psychoses, occasionally convulsions and paralyses of individual nerves. In the severe cases all grades of coma may be observed, hence the similarity of some cases to cerebral apoplexy.

The urinary changes consist in the appearance of albumin, which, in the mild cases, is of a toxic character, but where the kidney is implicated true albuminuria with casts is noted.

The changes in the skin are truly protean in character; almost all varieties of eruption and inflammation have been observed at different times, from hyperemia to actual gangrene.

The spleen is commonly enlarged, but this is of no special value in the diagnosis or even in the differential diagnosis of sepsis, for, as is quite well known, this condition occurs in the great majority of infections. Of special diagnostic importance is an infarct in the spleen, which is not of infrequent occurrence in the course of sepsis, appearing particularly in the condition designated malignant endocarditis.

The affection most commonly confounded with sepsis is acute articular rheumatism, for, as has already been mentioned, implication of the joints, inflammation of serous membranes, cutaneous eruptions, and fever are common to both diseases. However, upon close study, the arthritic inflammation of sepsis is found to differ from that occurring in acute articular rheumatism in a few important particulars. In sepsis, while there may be swelling of the joint, the pain is usually not of the acute character which is characteristic of rheumatic pain; nor does the joint implication in sepsis show the fleeting character nor the symmetry which is so usual in acute rheumatic fever. Besides the joint in sepsis, the bones, particularly the long bones and the periosteum, are sensitive to pressure —a condition quite infrequent in acute rheumatic fever. Sweating is unusual in sepsis, at least to the extent in which it occurs in rheumatic fever. The deposition of urates in excess is frequent in rheumatic fever, but not at all characteristic of sepsis; and finally, in a questionable case the specific effect of the salicylates would be a great factor in determining the case as of rheumatic origin and not septic. It must be stated that there are some cases in which the differential diagnosis between these two affections

cannot be determined even by the findings at the autopsy. By some authors it is held that acute rheumatic fever is no other than an attenuated form of sepsis, and it appears that this view is constantly gaining ground.

The differential diagnosis between cryptogenetic septicopyemia and acute miliary tuberculosis is often difficult and sometimes even impossible. However, the signs of cyanosis, marked dyspnea, and involvement of the apices would be in favor of miliary tuberculosis. The finding of tubercle bacilli in the sputum, urine, or blood of the patient (which, however, is quite rare) would of course finally establish the diagnosis.

The differential diagnosis between sepsis and enteric fever at the first glance would appear quite easy, but experienced diagnosticians (Leube, Jürgensen) have published cases showing how they have mistaken one disease for the other.

The three cases quoted are quite remarkable in more than one respect. In the first, the finding of the bacillus of Friedländer in the blood and in the sputum of the patient during life stamps the case as almost unique. Very few instances have been recorded in which the bacillus mucosus capsulatus has been found as the pathogenic agent in sepsis, and so far as we know only in one other case, published by Lenhartz, was the bacillus found in the blood during the life of the patient. The pneumococcus has been found more frequently, but by no means constantly.

In regard to the treatment we may be brief. There is no specific treatment. All authors are unanimous upon the point that the patient must be kept absolutely at rest in bed; that the nutrition must be plentiful and of a character to sustain and increase strength. Alcohol is advised by some authorities and not employed by others. In general, it may be stated that tonic treatment meets the indications best, but even in favorable cases the disease may drag on for months and years, and then, when the patient has been thoroughly exhausted, emaciated to an extreme, death occurs. Even the cases with the mildest symptoms at the onset may terminate fatally, while the reverse is also true, that cases with severe and threatening symptoms sometimes terminate in recovery.

BIBLIOGRAPHY.

1. Nothnagel's Special Pathology and Therapy, vol. iii, part 4, p. 300.
2. Klinische-Pathologie des Blutes. Grawitz.
3. Litten: Ueber septische erkrankungen. *Zeitschrift für klin. Medicin*, Bd. 11, p. 378 (of 1881).
4. Medical Diagnosis. Leube-Salinger.
5. Senn: Surgical Bacteriology.
6. Jürgensen: *Berliner klin. Wochenschrift*, No. 18, 1888; Modern Clinical Medicine, 1905, p. 645.
7. Strümpell: Text-Book of Medicine.
8. Roger: Infectious Diseases.
9. Osler: Practice of Medicine.
10. Tyson: Practice of Medicine.
11. Sternberg: A Manual of Bacteriology.

THE TREATMENT OF PNEUMONIA.

By H. A. Hare, M.D.,
Professor of Therapeutics in the Jefferson Medical College.

Although our increasing knowledge concerning the relation of microörganisms to disease has impressed upon us the fact that a large number of maladies at one time considered non-infectious are really due to the entrance into the body of a specific germ, it is an undeniable fact that in no instance has our conception of the character of a malady been more materially altered than by the discovery of the micrococcus lanceolatus. While it is true that this discovery has not as yet materially improved our methods of combating the disease in the sense that it has provided us with an efficient antitoxin, or with information which indicates that any drug has a specific influence, it is also a fact that bacteriology has shown us, as in so many other instances, that the free administration of drugs to a patient suffering from pneumonia is, in many instances, an abuse, and may even diminish the chances of the patient's recovery. Further than this, the recognition that croupous pneumonia is due to a specific germ has shown us the necessity of varying our treatment in different cases, and has impressed upon the practitioner the important fact that in those cases which recover he must not give himself too much credit, and, conversely, that in those that die he must not chide himself, or become pessimistic as to the value of drugs.

The statistics which exist as to the mortality of this disease, and therefore those which exist as to the influence of treatment upon it, are, I believe, practically useless, because it is impossible to

bring together a large number of cases without jumbling instances in which the patient has suffered not only from croupous pneumonia, but from some subacute or chronic illness in which croupous pneumonia has simply been a terminal infection. As a very large majority of cases of croupous pneumonia are instances of terminal infection, or at least develop as complications of diseases already present, it is manifestly improper to report them with instances in which the disease is essentially primary and in which the patient has to combat but one infection, and that when his system is in a fair state of vital resistance. This fact, which holds true in regard to volumes of statistics, holds true also with the smaller number of cases which are frequently published by individual practitioners, who usually fail to carefully separate primary and secondary cases. Again, we are deprived of information concerning the benefit of different lines of treatment by the fact that croupous pneumonia is an exceedingly common disease in old age, so that it is, in one sense, a terminal infection in this condition, attacking the individual when advanced years have deprived him of the ability to withstand invasion by microörganisms. Statistics are also impaired by the fact that many cases of catarrhal pneumonia and acute pneumonic phthisis are reported as cases of croupous pneumonia, or simply as cases of "pneumonia," and it is probable that occasionally an infarction of the lung, or a pulmonary edema due to renal disease, enters the records as a case of pneumonia. I mention these facts because they indicate why we have no reliable information as to any plan of treatment, and because it impresses upon us the necessity of a careful differentiation of the cases as to whether they are primary or secondary, and further because they show that whether primary or secondary, they should be studied in decades of life and with complete information as to the condition of the patient at the time of onset. It is clear, therefore, that he who advocates any single plan of treatment for cases of croupous pneumonia is one who either lacks large experience, or is unable to derive accurate conclusions from such an experience. On the one hand we see a patient essentially feeble recover from the disease, and on the other we see one essentially robust a victim of its onset. To suppose that any plan of treatment of a curative nature can be identical for either patient is manifestly erroneous—the more so when we recall that not only does vital resistance vary in each patient, but the virulence of the infecting microörganism is remarkably at variance in different instances, not only because of the vital resistance of the patient, but because it is well known that the pneumococcus is a germ which is not tenacious of life and it varies in its power to produce lethal effects.

If it is thought, however, from these preceding remarks that I believe that there are no remedies of value in croupous pneumonia, I have misled my readers. While firmly convinced that the disease cannot be cured in the sense that we cure syphilis with mercury, or malarial infection with quinine, I am also firmly convinced that the natural history of the disease may be much modified in a favorable manner by proper medical attention, and further, I am convinced that while these plans of treatment are to a large extent symptomatic, they nevertheless bring the ship through the storm in instances in which without such aid it would surely be wrecked.

In order that my conception of the results of therapeutic interference may be clearly defined, I think we may divide all cases of pneumonia into three classes:

First, those in which no treatment can be of any value, for though the lesion in the lung may be small, the system is, from the start, overwhelmed by a profound toxemia.

Second, those cases which can only recover if they receive intelligent aid and support at critical periods; and

Third, there is another class which not only get well without treatment, but not infrequently in spite of it; for all too frequently we find physicians driven by the patient's friends, and their own anxiety, to the administration of a large number of drugs with the idea that they may do good, without the important realization that anything which is powerful enough to do good may, under certain circumstances, be powerful enough to do harm. These are the cases which make us feel like saying "Give the patient a chance," and these are the cases which remind us of the extraordinary bacteriolytic power

of the blood, and the remarkable methods by which nature combats disease, and which should make us hesitate before we drop into the cog-wheels of such delicate machinery drugs which may, if wrongly given, disorder or break down this complex mechanism.

Perhaps, too, it may be proper to divide cases of pneumonia into those of small lesions and marked toxemia, and those with large lesions in the lungs and slight toxemia. We have all seen cases representing both of these types. In the toxemic class I am free to confess that therapeutic measures cannot promise much, unless it be that by maintaining activity of the kidneys and liver through the action of alkaline and hepatic stimulants we may eliminate or destroy poisons. Occasionally, too, these cases seem to be benefited by hypodermoclysis, if used in moderate quantity, and very occasionally good results may follow bleeding and hypodermoclysis, or intravenous injection of normal saline solution. Here again, however, the physician must carefully consider whether the blood has so far lost its bacteriolytic and other powers for good as to be less valuable to the patient than is salt solution.

The cardiac stimulants which seem to do most good in the toxemic cases are Hoffmann's anodyne or aromatic spirit of ammonia. Digitalis is, I think, rarely as valuable at such times.

While strychnine is useful, I am firmly convinced that it is much abused. It is, I think, a whip which should be used to pull the patient out of a critical period, and in the majority of instances the practice of administering it in full dose every three or four hours, day after day, deprives the physician of the whip which he may need, should a crisis arise, and increases nervous irritation.

Another drug which, for some reason, has become exceedingly popular with the profession in the treatment of pneumonia is nitroglycerin. Its use in many cases is a lamentable instance of the fact that many of us are willing to administer a drug because we have heard of its doing good in one case, and therefore imagine that it may do good in another. Originally employed in pneumonia in cases with high arterial tension for the purpose of relieving the heart of extra work, it has come to be employed with the idea that it is a circulatory stimulant, which is an utterly erroneous conception of its physiological action, and I have frequently seen it given in cases in which the disorder of the heart depended upon vascular relaxation, which was exaggerated by the drug, rather than upon any influence exercised by the disease upon the heart. When the skin is hot and dry, the kidneys inactive, and the tension high, it or sweet spirit of nitre, which we are prone to forget has a similar physiological action because of its nitrous ether, are often valuable drugs. When the first sound of the heart lacks tone, and the pulmonary second sound is accentuated, it is my habit to administer 5 minims of a physiologically-tested tincture of digitalis every four or eight hours, and every two or four hours to give 10 minims of an equally active tincture of belladonna, the belladonna being given twice as often as the digitalis because it is fleeting in its effects, and the digitalis is prolonged in its influence. If the fever is high, it has been my experience that it is essential that an ice-bag should be placed over the heart if we are to get any value from the use of the digitalis. When the circulatory condition is urgent, and the pulse above 100 and gaseous, this treatment, aided by the administration of Hoffmann's anodyne by the mouth and camphorated oil hypodermically, will often pull a patient through when all other methods fail.

The value of oxygen by inhalation is debatable. Physiology would seem to teach us that it cannot do much good, yet almost every one resorts to it, and it undoubtedly gives comfort to the patient's friends, and sometimes to the patient himself.

There are many other points connected with the treatment of pneumonia in its varied manifestations which might be considered, if time permitted. The last one of importance to which I wish to refer is the use of morphine. In cases in which the kidneys are fairly active, and not diseased, and in which restlessness and delirium deprive the patient of rest and sleep, so that the nurse reports at the end of thirty-six hours that the patient has not closed his eyes, I believe that life is often saved by giving a hypodermic injection of morphine, for often several hours of quiet sleep will so refresh a patient that the whole complexion of the

case, to use a political phrase, will be different upon his awakening. Like strychnine, however, the morphine does best if it is carefully reserved for real emergencies. Strapping the chest, and the use of small doses of codeine, or heroin, or Dover's powder, being used for the relief of pain when the pleura is sufficiently involved to cause this symptom.

If this brief paper has seemed to be iconoclastic or nihilistic, it has failed to convey my real views as to the efficiency of treatment, and in conclusion I would like, as an explanation of my attitude, to quote two paragraphs which can be found on the fly-leaf of my book on "Therapeutics:"

"When called to guide a patient through an illness the physician should be constantly a watchman, and a therapeutist only when necessity arises.

"A good physician is one who, having pure drugs, knows when to use them, how to use them, and, equally important, when not to use them."

TREATMENT OF CONJUNCTIVITIS.

FERGUS gives in the *British Medical Journal* of March 11, 1905, the following advice. He reminds us that formerly it was the custom to apply a compress and bandage in the treatment of almost every case of corneal ulceration. The bandage was supposed to do good first by keeping the eyes at rest, secondly by excluding cold, and thirdly by giving the ulcerated surface a certain amount of support. It is obvious on the slightest consideration that a bandage applied only to one eye will not keep it at rest, for, notwithstanding its application, the eyeball will move freely along with its fellow; all that the bandage does in this respect is to subject the eye in its movement to a greater amount of friction. A bandage may or may not keep out cold. While the author has never tested the difference of temperature between the skin under such a bandage and the same part of the skin without it, he believes one thing to be certain, and that is that it does retain septic secretions, and consequently it simply foments the organ with its own septic discharges. He admits that sometimes a bandage is of use in preventing an ulcer from becoming ectatic, but apart from this limited use bandages seem to him to be quite inadmissible in the treatment of corneal ulceration. In most instances they are productive of harm. If the eye must be protected, then let it be by a shade or by a pair of smoked glasses. If dark glasses are to be used for the purpose of diminishing the amount of light which enters the eye, they should be smoked glass and not blue. These latter allow the actinic rays to pass freely, and hence, if it be desired to keep the chemically strong rays out of the eye, it is a mistake to tint the glass with blue or purple. At the same time, cobalt-blue glass, or the more recent amethyst glass, while allowing the light of short wavelength to pass, will largely exclude the heating portions of the spectrum. Smoked glass diminishes both sets of rays.

It would therefore seem that the former practice of fomenting eyes should be discarded. Presumably nothing more aids the development of microörganisms than a moist heat, and corneal ulcers have been made very much worse by the application of fomentations. So far as the author's practice is concerned, he employs them only for two purposes, one of which is to promote suppuration in the early stages of panophthalmitis, and the other to relieve the pain of rheumatic iritis.

THE EFFICIENCY OF COPPER FOIL IN DESTROYING TYPHOID AND COLON BACILLI IN WATER.

KRAEMER reports his studies on this subject as follows:

1. The intestinal bacteria, like colon and typhoid, are completely destroyed by placing clean copper foil in the water containing them.

2. The effects of colloidal copper and copper sulphate in the purification of drinking-water are in a quantitative sense much like those of filtration, only the organisms are completely destroyed.

3. Pending the introduction of the copper treatment of water on a large scale the householder may avail himself of a method for the purification of drinking-water by the use of strips of copper foil about 3½ inches square to each quart, this being allowed to stand over night, or from six to eight hours, at the ordinary temperature, and then the water drawn off or the copper foil removed.

The Therapeutic Gazette

EDITED BY
H. A. HARE, M.D.,
GENERAL THERAPEUTICS,
AND
EDWARD MARTIN, M.D.,
SURGICAL AND GENITO-URINARY THERAPEUTICS.

SUBSCRIPTION RATES FOR 1905:

(PAYABLE IN ADVANCE.)

THERAPEUTIC GAZETTE (*postage included*) $2 00
THERAPEUTIC GAZETTE with MEDICAL AGE..... 2 50
THERAPEUTIC GAZETTE with BULLETIN OF PHARMACY 2 50
THERAPEUTIC GAZETTE with MEDICINE..... 3 25
THERAPEUTIC GAZETTE with AGE and MEDICINE..... 4 00

Foreign subscriptions may be ordered either through our European branch, 111 Queen Victoria Street, London, E. C.; or through our agent in England, Mr. H. K. Lewis, Medical Publisher and Bookseller, 136 Gower Street, London, W. C. Price, 10s. Remittances may be made either by Postal Order or Stamp.

Price to Foreign Subscribers direct (postage included), $2.50 (10 shillings). English postage-stamps received on remittances.

Editorial communications should be addressed Northwest Corner Eighteenth and Spruce Streets, Philadelphia. Articles intended for the Original Department of the GAZETTE will be accepted only with the understanding that they are contributed to it exclusively.

Authors will receive reprints in pamphlet form, without charge, providing the request for them be written on the articles sent.

Business communications should be addressed to

Publisher The Therapeutic Gazette,
Box 484. DETROIT, MICH.

Leading Articles.

THE VALUE OF NITROGLYCERIN.

It is not many years since we called attention in these columns to the mistaken idea, which seems to be quite general, that nitroglycerin is to be employed in the course of exhausting diseases and in the event of circulatory failure as a stimulant to the heart and blood-vessels. We pointed out at that time that there is nothing either in the clinical history or in the experimental records concerning this drug which would justify its use for this purpose, and we endeavored to emphasize the fact that the cases in which it really does good are those in which the reduction of arterial tension produced by its influence results in relieving the heart of an extra burden which it is finding difficult to carry.

Two papers have recently appeared which more or less directly bear upon the use of nitroglycerin for its circulatory effect. One of these is by Dr. Clifford Allbutt, Regius Professor of Physic in Cambridge University, and the other is by Dr. H. P. Loomis, of New York. Dr. Allbutt, in discussing the prevention of apoplectic seizures, urges reliance upon proper rules of diet and modes of life rather than the employment of vascular sedatives, although he recognizes that under certain circumstances the additional use of drugs may be most advantageous. Dr. Loomis, on the other hand, contributes an article which is somewhat iconoclastic in its tendencies. He points out that in the dose of 1/100 of a grain three times a day, nitroglycerin in the majority of instances exercises very little real effect in reducing arterial tension. He also points out that these doses are not only too small to be advantageous, but that the action of the remedy is so fleeting that the effects produced by each individual dose last but a very short time. There can be no doubt that to some extent he is correct in these views, but on the other hand it is certain that many patients are benefited by these small doses given but three times a day, and that any increase in the size of the dose, or in the frequency of administration, produces headache or other evidence of the full physiological action of the drug.

Practical experience has convinced the writer of this editorial note that nitroglycerin is certainly one of the most valuable remedies which we possess, and therefore we are somewhat disappointed that Dr. Loomis should, so heartily, condemn it. He states in the course of his paper that he has come to rely upon chloral as a very much more efficient and satisfactory vascular sedative than nitroglycerin. No one who has employed chloral largely can have failed to have become impressed with the fact that it is a powerful and constant cardiovascular sedative, but it seems to us that its physiological action differs so materially in some respects from that of nitroglycerin that it cannot be considered, at least in many cases, as a satisfactory substitute. While it is true that it is an active vascular sedative in the sense that it reduces arterial tension, it is also a fact that such doses produce a simultaneous depression of the heart, and in the majority of cases in which nitroglycerin is indicated the condition is one of high arterial tension associated with more or less cardiac feebleness or fatigue. In other words, most persons who need nitroglycerin suffer not only from vascular tension, but

from myocardial change, and require something which would relieve the heart of the resistance which is offered to its action, and avoid any drug which will simultaneously depress this viscus. It is for this reason that physicians almost universally rely upon a combination of nitroglycerin and digitalis in treating many persons of advanced years when these patients present tense vessels and a tired heart. As we have just said, these conditions certainly contraindicate the use of chloral, which is well known to possess a distinct depressant influence upon the heart muscle. In those comparatively rare instances in which, in association with arterial spasm, there exists excessive cardiac hypertrophy we can readily understand that the action of chloral may be advantageous. But we are inclined to believe that such persons will be benefited more by aconite than by chloral, since its effects can be more readily controlled and immediately overcome by the proper use of stimulants, or by the withdrawal of the drug.

THE IMPORTANCE OF PURE MILK IN THE DIETETIC TREATMENT OF INFECTIOUS DISEASES.

During the summer months of 1904 we published an editorial note calling attention to a very valuable research made by Dr. Park, of New York, in regard to the bacterial content of that city's milk supply, and concerning its influence upon the health of children. It will be remembered that children who were fed upon raw, but pure, milk thrived better than those who were fed upon pasteurized milk. But the fact will also be recalled that children who were below par frequently became ill when milk was ingested which contained a superabundance of bacteria.

Within the last few years physicians have been more and more interested in the so-called modification of milk for infant feeding. The modification consists in changing the relative quantities of fat, proteid, and water, so that cow's milk may approximate human milk as nearly as possible, and so that it may be prepared, from month to month, to meet the needs of the growing child. If anything, too much attention has been paid to this question, because in the vast majority of instances the digestion of the healthy child adjusts itself, to a large extent, to the food which is ingested. On the other hand, careful study of the bacterial content of milk has received but little attention, and many instances are met with in which milk, which has been modified chemically, has nevertheless produced disastrous results because of the large number of microörganisms which it carried into the body.

That this subject is of importance not only when children are treated but also when adults are depending, to a large extent, upon milk diet, has recently been emphasized in a valuable paper prepared by Dr. Edsall, of Philadelphia, who has shown that cases of typhoid fever vary as to the progress of their malady to a considerable extent, according to the bacterial content of the milk which they receive. In a number of instances in which typhoid patients suffered from excessive diarrhea, it was found that the milk administered to them contained an excessive number of bacteria, and it was also found that these intestinal disorders became modified as soon as milk devoid of such bacteria was administered. When we consider that the milk examined came from what was considered to be an excellent source, and had previously always been considered milk of the first quality, it becomes apparent that Dr. Edsall has called attention to a point of very great importance. His studies emphasize the fact that we should not consider intestinal disorders occurring in the course of typhoid fever as a natural manifestation of the disease, but determine in every instance that the food which is given is not responsible for those difficulties, which at times test our skill to the utmost, and seriously impair the patient's chances of recovery.

THE OPEN-AIR TREATMENT FOR TUBERCULOSIS.

The profession of medicine in particular, and the world in general, having learned that drugs perform but a feeble function in the cure of tuberculosis, and that good feeding and fresh air are our most powerful methods of limiting or eradicating the disease, medical men are,

of course, interested not only in the study of climates which are favorable to such patients, but still more in the measures which can be undertaken for the patient's benefit when he is forced by circumstances to remain at home. It is surprising how many tubercular patients who have been accustomed to sleeping in badly ventilated rooms, fearing lest they take cold if plenty of air is admitted to the bedroom, can speedily adjust themselves to the new conditions of free ventilation, and furthermore, rapidly show benefit from this method of treatment. In the early part of the last century the popularity of night-caps doubtless depended upon the fact that, owing to inadequate heating facilities, bedrooms became exceedingly cold in the early morning hours, and it was therefore necessary that some head-covering, other than the bedclothes, should be provided. In some instances it will be found that if tubercular patients sleep in a room with the windows wide open, they will not take cold if only they will wear a nightcap. It is also essential, in most instances at least, that they shall not lie in a direct draught, and therefore both the ingenuity of the patient and the physician may be exercised in devising means by which a free access of air may be obtained without undue exposure.

To those who are particularly interested in this matter, and who have patients under their care at the present time who require home methods of fresh-air treatment, we desire to call attention to the article in the *New York Medical Journal* of March 4, 1905, by Dr. Knopf and Dr. McLaughlin, of New York. Dr. Knopf is known far and wide for his earnest advocacy of measures designed to stamp out tuberculosis, and also for his interest in those measures which may be taken for the benefit of patients who are already infected. The article to which we refer contains a number of illustrations which will give practical points along these lines. One illustration shows a cheap but useful sleeping-shack, another a half-tent, for the cure in the open air; still another illustrates a window-tent for open-air treatment in the bedroom by means of which the patient's face and the upper part of the trunk are exposed to the outside air without it being possible for a draught to annoy him, and with the rest of the body exposed to the air of the room so that undue chilling may not take place. The article also contains an illustration for a woolen helmet for sleeping out-of-doors in cold weather, and two other illustrations of pocket sputum-cups, in which the patient may deposit his sputum till it can be burned, or otherwise destroyed.

PERMANGANATE OF POTASSIUM AS A REMEDY IN SNAKE-BITES.

About twenty or twenty-five years ago Dr. S. Weir Mitchell and Dr. Reichert published results from their investigations of snake venom which indicated that the permanganate of potassium may prove of very material value in acting as an antidote to this lethal substance. Since that time permanganate has been largely used all over the world as a remedy when men and animals were bitten by poisonous snakes, and not long since Sir Lauder Brunton devised an instrument by means of which the permanganate may be readily carried in the pocket, and immediately injected into, or into the neighborhood of, the wound. Our attention is once more called to this subject by an article in the *Indian Medical Gazette* of Calcutta for February, 1905, in which Captain Rodgers, of the Indian Medical Service, reports several cases treated by this method, the wounds being due to the bites of Russell's viper or the cobra. After making free crucial incisions of the bitten part, the wound was thoroughly flushed with a hot solution of permanganate of potassium, and then bandaged. Recovery occurred in each instance, although the cauterant action of the hot solution of permanganate of potassium delayed healing so long that the part was not well for about three weeks. Old subscribers of the THERAPEUTIC GAZETTE will probably remember that about twelve or thirteen years ago Dr. Amos Barber, of Cheyenne, Wyoming, contributed an article in which he reported cases in which excellent results had followed this method of treatment.

SYPHILIS ACQUIRED IN PROFESSIONAL WORK.

It is, perhaps, only the syphilographer who appreciates that syphilis is comparatively often acquired by doctors and surgeons in the course of their routine

professional work, and usually not from necessity, but from sheer carelessness and a certain callousness as to the danger of this infection, hard to understand on the part of those who see what the disease can do at its worst. Probably not even the syphilographer realizes the frequency of these accidents, since doubtless a mild case is treated by the doctor who has acquired it without consultation, and from a perfectly comprehensible motive of concealment. It is probably because these mild cases are concealed that syphilis seems to exert its greatest virulence in doctors, as a rule only those who have resisted the ordinary treatment applying for help.

Montgomery (*Journal of Cutaneous Diseases,* April, 1905) records seven cases of what he calls "syphilis professionally acquired," two of which were inoculated while operating. In one of these cases the operation was that of circumcision upon a patient suffering from chancre of the foreskin. Although the surgeon cut himself on the wrist there is no record of his having taken the faintest precaution to avoid the syphilitic infection which in due course appeared. The second doctor wounded himself under the nail of the left ring-finger while removing a breast for what was supposed to be a cancer. Again there was no effort made to disinfect the wound, though in this case the presence of syphilis in the patient operated upon was not suspected. A third doctor was inoculated whilst attending a patient, apparently free from syphilis, during her confinement. The wound of entrance was caused by a parrot bite. There was in this case no swelling of the epitrochlear, lymphatic, or axillary glands, although later a typical roseola developed. The doctor noted that the child, although perfectly healthy at birth, subsequently developed symptoms of syphilis. The wound caused by the parrot bite had been carefully protected at the time of the delivery of the child by a covering of flexible collodion, which proved perfectly inefficacious. In the literature on this subject the majority of cases have been acquired during professional attendance on parturient women, and all who have had special experience in this line have been struck with the fact that doctors exhibiting extragenital chancres are often entirely unable to trace their source. Such chancres sometimes develop on the lips, and are doubtless in many cases due to rubbing these surfaces with infected fingers. Fournier reports five chancres of the eye in medical men contracted from sputum ejected by the patient, though three of them washed their faces well after the accident. Taylor records two cases of syphilis acquired during the performance of a post-mortem examination—in one case eight hours after death, in the other case nine hours after death.

The value of papers such as that of Montgomery lies in the fact that it calls the attention of doctors to a danger which is so habitually escaped that it is usually neglected. The doctor not only for his own protection but for that of others should make it a rule to thoroughly wash his hands immediately after having handled every case; to practice cauterization of all wounds received during the course of operations or manipulations; to wear rubber gloves, or at least finger-cots, when such manipulations or operations are performed upon patients suffering from syphilis; and to avoid the spittle splashing of confidential talkers or the expectoration of those who are made to gag and cough by his examinations. The observance of these simple rules will probably prevent absolutely the acquisition of syphilis in the performance of professional work.

X-RAYS AND STERILITY.

Among the dangers to which the practitioner of medicine has been exposed since the beginning of the art, and which it may be said he has met not so much with bravery as with perfect heedlessness, there is a modern one which, though in itself not fatal, is more likely to excite his attention than the hundreds which hold for him death in its most distressing, lingering, and appalling form. Wide attention has been called to this modern danger by an article contributed by Tilden, Brown, and Osgood in the *American Journal of Surgery,* No. 9. These observers state that men by their presence in the *x*-ray atmosphere incidental to radiography for therapeutic use or testing of tubes may after a period of time be rendered sterile. This statement is based

upon the discovery of ten *x*-ray workers who were the subject of total azoöspermia, although none of them had suffered from any venereal disease or traumatism involving the genital tract, and none were conscious of functional derangement. Subsequent observations have increased the number of observed cases to eighteen, in all of whom either total azoöspermia or oligonecrospermia was demonstrated. Indeed, all of those who have been working extensively in *x*-rays for more than three years failed to show spermatozoa in their seminal fluid. A few engaged in the work for a shorter time, and particularly those who exercise care in avoiding direct exposure to the active tube, show varying stages of oligonecrospermia. Several cases subject to infrequent exposures showed normal spermatic fluid. In none of these cases was there noted even a transient erythema of the scrotum, nor was there any deterioration of sexual activity. Of the married men none have begotten children since they undertook *x*-ray work.

Attention to this result of *x*-rays was first excited by Albers-Schoenberg, who exposed five male rabbits and six guinea-pigs, and made fourteen matings with unexposed females for periods of ten days to six months, without a single litter being produced, although the male covered the female as frequently as the normal animal does. Autopsy on these animals showed spermatozoa in the seminal follicles or testes in but one. These animals were observed for four and a half months after cessation of exposure, but failed to impregnate. Bergonie and Tribondeau reported similar results in white rats.

Philipp reports a case treated for pruritus ani, the time of total exposure being 195 minutes. Seven months later examination of the seminal fluid showed complete azoöspermia. Philipp noted that after two exposures each for fifteen or twenty minutes for the cure of pruritus the number of spermatozoa was not diminished, but that they were all dead. This patient was so greatly relieved from his pruritus that he insisted upon two further treatments, after which the spermatozoa disappeared. Five months later the semen was found swarming with living spermatozoa.

Halberstaedter concludes from his experiments that the ovaries are markedly more sensitive to the *x*-rays than the skin.

The rays seem to produce a degeneration of the specific epithelial cells, though human spermatozoa in seminal fluid exposed for thirty minutes present no demonstrable change in form or motility. As a means of prevention it is suggested that the operator of the Roentgen tube should work behind a screen impermeable to the rays and should expose himself only when absolutely necessary, and then only for an extremely short time.

In view of the recent legislative activity in regard to the prevention of the breeding of idiots, hopeless epileptics, and criminals, if the sterilizing effect of the *x*-ray be permanent, this might prove a useful means of ridding communities of children cursed from their birth and destined to become a burden and expense to the state, and at the same time might make legislation directed to this end feasible by satisfying those whose objection is based upon the performance of a more or less mutilating surgical operation.

Reports on Therapeutic Progress

THE TREATMENT OF ACUTE AND CHRONIC RHEUMATISM.

ILLMAN in *American Medicine* of March 11, 1905, states it is his belief that primarily the gastrointestinal tract is at fault in a large percentage of cases of acute and chronic articular rheumatism. He has recently adopted salol as a basis of treatment with most gratifying results.

As the result of an article "On the Advantages of Salol in the Treatment of Rheumatism," which he published in December, 1903, many practitioners questioned the benefits to be derived from salol, because of the comparatively small amount of salicylic acid the patient receives in the course of treatment; but it should be remembered that salol is not given primarily for the rheumatic condition, but rather for the cause of it—a fermenting catarrhal bowel.

How can any one expect any marked or prompt results from any salicylate, even in enormous doses, as many authors advise, if the drug is to be poured down into a stomach and bowel filled with great quantities of mucus, undigested food,

bile, and putrefying feces, as the very obnoxious fetor of the breath in the patient with inflammatory rheumatism only too plainly indicates?

To give great doses of the salicylates at once in such cases is sure to defeat the very purpose for which they are given, by upsetting an already "sick stomach," and making the condition one is trying to alleviate. A purge is, therefore, the primary indication, and a clean alimentary tract is necessary before we can hope to get the best results from internal treatment. It is then the disinfectant and antifermentative effect of salol, after a brisk saline purge, makes this drug so effective in rheumatic treatment, especially since it also contains five parts of salicylic acid.

If the author were to name any one drug outside of the salicylates that is indicated in rheumatism, he should say magnesium sulphate, the results following its administration in slight rheumatic attacks often being as marked as though the salicylates had been given.

In the treatment of chronic rheumatism we are confronted with the problem as to the propriety of the long-continued use of the salicylates. Relapses are considered to be more frequent than under any other form of treatment. There is a general average of 26 per cent under this method as against 16 per cent under the alkaline and other methods. Relapses, however, appear to occur less frequently in cases which yield to salicylates in the first few days than in those which take longer.

The salicylates neither control nor prevent any inflammation of the endocardium, or pleura, and with the exception of salol fail to have any marked effect upon the pyrexia. They do not prevent the condition from involving other organs even after the symptoms have subsided, hence they do not protect the heart; and no less an authority than Flint believes that rheumatic endocarditis and pericarditis are more frequent since the introduction of the salicylate treatment; Burwinkel also does not regard salicylic medication as an advance in the treatment of articular rheumatism. Excess of the salicylates is likely to produce unpleasant toxic effects, such as nausea, vomiting, abdominal pain, frontal headache, tinnitus aurium, and other unpleasant symptoms, which very often make the remedy worse than the disease. Therefore, the author avoids the use of excessive doses of the salicylates, only giving them, and then not over a very extended period, after the subsidence of the symptoms, depending upon baths, diet, hygienic and saline treatment to bring about a complete recovery.

The serum treatment seems to be reasonably successful. Schmidt tried Menzer's antistreptococcic serum; in fifteen cases, six were unmistakably improved, and in five cases no improvement was apparent. The more pronounced the reaction the better the results observed. Schaefer, in six cases of articular rheumatism in adults and children, tried Menzer's serum with the best results; the attacks were shortened and the health afterward was unusually good. Stengel has also noted decided improvement from the use of antistreptococcic serum in three cases of protracted recurring rheumatism. In treating acute and chronic rheumatism the writer regards the patient in much the same light as the surgeon does an infected cavity, the all important necessity being drainage in both instances. Whether the drainage is for the purpose of eliminating a germ or its toxic product or the toxic product of a faulty metabolism, the economy demands an elimination of the detrimental substance before results from medication may be expected. We should then institute a system of drainage, especially from the skin, kidneys, and bowel. We assist nature in her effort of elimination from the skin by producing profuse sweats with diaphoretics and hot local or general applications, and draining the kidneys with mild diuretics.

The use of the static wave current should also be considered as a means to assist the patient in the elimination of urea. The effect of this treatment has been carefully observed by Boardman Reed, who reports one case in particular, in which the urine before static wave current treatment contained 0.8 per cent of urea, and after a fifteen-minute treatment with the static wave current contained 2 per cent of urea.

Haig's idea that uric acid is the cause of "all evil" (so to speak), and of rheumatism, has long been disproved by Billings and other leading clinicians. On the other hand, there is no disputing the fact that the increased elimination of urea is pro-

ductive of good results in treating rheumatism.

Drainage from the bowel is obtained by the use of salines, especially magnesium sulphate, in small or large doses, as necessary. Burwinkel even prefers to treat the condition by venesection, withdrawing 150 to 300 cubic centimeters of blood at a time. This is drainage in the full appreciation of the term, but such a procedure is not to be considered in the treatment of primary mild attacks.

In chronic rheumatism, massage, both local and general, exercise, faradism, and baths are very beneficial. The patient should be cautioned especially as to diet, each case being a law unto itself in this respect; but meats, condiments, fruits, especially too green or too ripe, alcoholic and cold drinks are to be reduced in quantity or prohibited, as is also any other particular article of food which acts as a gastro-intestinal irritant in a given case.

CHOICE OF A GENERAL ANESTHETIC AND SELECTION OF METHOD OF ADMINISTRATION.

A paper on this well worn theme is contributed to the *Medical Record* of February 11, 1905, by PEDERSEN, who thinks that the considerations which cover the selection of a general anesthetic for a particular patient comprise the following heads:

1. *General State of the Patient.*—Good health and absence of visceral diseases do not guarantee a featureless anesthesia, as Hewitt says, although most operators think otherwise erroneously. Feeble health usually means perfect susceptibility, and hence in these persons the cause of trouble is much less and the anesthesia far more apt to be featureless.

2. *Sex and Age.*—Females are better subjects than males because they are less intemperate, more susceptible to drugs, and on the whole more courageous in sickness and more willing to do what is required of them by the anesthetist. The year of age counts for less than does the disease present at different periods of life in influencing anesthesia. Infants and young children may take ether drop by drop. Hewitt reports the case of a six-day-old child who took ether in this manner perfectly for a rather protracted operation. For infants C. E.-ether or A. C.-ether is a very good sequence. During the stage of crying and struggling chloroform should be gven very deliberately lest the deep inspirations lead to overdose. All children bear asphyxia poorly, and hence react unfavorably to nitrous oxide gas.

In advanced life, if the lungs and heart are free of progressing disease, the choice is much the same. As a rule, nitrous-oxide-ether is not the best sequence for these patients. C. E.-ether is in the minds of many a preferable combination; the writer, however, has never experienced any difficulty with the gas-ether technique.

3. *Temperament.*—Naturally the placid are the best, while the nervous and hysterical are the least desirable subjects. Anesthesia of the cornea in the hysterical may deceive the anesthetist as to the degree of narcosis present.

4. *Habits.*—Alcoholism is the most important, and invariably renders the subject combative and resistant to the drug. Hewitt states that he once gave 5½ ounces of chloroform in seventy-five minutes to a 56-year-old man, whereas the majority of subjects require an ounce or less per hour. Nitrous oxide will not anesthetize an alcoholic, but may destroy pain. Morphinism usually makes less anesthetic necessary, but in marked cases may reverse this effect and produce a long train of undesirable nervous phenomena. The tobacco habit is an important one, because it renders the upper air-passages chronically inflamed. Such subjects always have loud stertor and much bronchorrhea. Previous anesthesias are important only with regard to the condition of the patient at the time. If the subject is anemic they play no part; if robust, they may be followed by great resistance.

5. *General Physique.*—The poor subjects are those of muscular strength, of obesity, and of plethora, whereas the inactive and anemic subjects are quite the contrary.

6. *Respiratory System.*—Hewitt states that in lost consciousness all preëxisting defects are greatly increased, which certainly coincides with the experience of the writer during the past six years. Firm and closely fitting teeth may be a very great bar to easy anesthesia; such patients require a small mouth-prop, as a rule, no matter whether ether or chloroform is used.

Subjects without teeth may suck their lips back and forth in a valve-like action which obstructs the air-way to a remarkable degree. Fixity of the lower jaw always makes the anesthesia difficult, whether the fixity is due to position or disease. Growth of the tongue, soft palate, and tonsils may become turgescent and excite dyspnea. Decrease in the supply of oxygen usually adds to their size. Growths of the neck, thyroid gland, etc., usually obstruct respiration. All these conditions rather indicate the chloroform-ether mixture, or ether drop by drop.

Diseases of the larynx and trachea require chloroform or chloroform mixed with ether. Bronchorrhea, pulmonary and pleural diseases, if active and progressive, indicate chloroform or chloroform-ether; if stationary, ether may be used cautiously. Recent pulmonary disease indicates chloroform or C. E.-ether sequence. The ether should be given most carefully and preferably drop by drop, so as to give exactly the required quantity and no more, with a bag cone, so as to warm the fumes as much as possible. When respiration and circulation are interfered with by such conditions as ascites and empyema, great care is necessary. The writer's opinion is that C. E.-ether or chloroform-ether is the best usually. Ether should always be at hand if chloroform is being used, so that if the evacuation of the fluid changes the condition of the circulation, it may be employed as a stimulant. In empyema, if the lung itself is no longer diseased, ether alone may be used. In both ascites and empyema much danger will be avoided if the fluid is aspirated a few hours before anesthetization.

7. *Circulation.*—Slight or compensated disease of the valves of the heart accepts ether well; cases which require cardiac sedatives will probably do better under chloroform or C. E. Cases which require stimulation will usually react better under ether alone than under chloroform in any way. When one is in doubt as to the exact condition of the heart, it is probably safer to use ether than chloroform. In the advanced cardiac cases, unless the patient must sit up to breathe, it is highly advisable to have him in the recumbent or semirecumbent posture, to give him plenty of air, to provide utmost freedom for the respiratory function. The cyanosis so often present with gas may overwork the right heart; therefore the nitrous-oxide-ether sequence is not to be recommended. Orthopnea always demands ether and absolutely contraindicates chloroform.

Cases with intermittent pulse usually improve under ether and often under C. E., but commonly require stimulation after withdrawal of the anesthetic. Myocarditic and fatty hearts require great caution and had best receive straight ether drop by drop. Atheroma, if marked, usually indicates C. E., and especially if myocarditis is present. Aneurism suggests C. E. with deliberation and caution, especially during the stage of struggling. The same dictum applies to venous thrombosis. Exhaustion and collapse require ether with care and precision. It is best to restore these patients by a moderate saline infusion before giving any anesthetic. Intestinal obstruction demands a light degree of anesthetic because shock is present, and great caution as to vomiting, of which there is much danger. It is commonly not accompanied by esophageal movements. The vomiting is usually more truly a regurgitation, for which the anesthetist must constantly be on guard. Many recommend that a pillow be put under one shoulder, the mouth-gag into place, and the sponge forceps at hand; that the gag be turned to the opposite side so as to permit the regurgitated fluid to collect in the lateral regions of the throat and mouth, wherefrom it may be wiped. The writer prefers Rose's position with the head extended over the edge of the table, so that the vomitus collects in the vault of the pharynx, whence it may be readily removed, while at the same time the respiratory current passes through the mouth held open by a gag while the tongue is pulled forward.

CARDIAC FAILURE IN PLAGUE AND ITS TREATMENT.

In the *Indian Medical Gazette* for April, 1905, CHOKSY, of Bombay, writes on this subject. He states that the means within our reach fall naturally into two main groups. One embraces the volatile, easily eliminated, and therefore evanescent stimulants like alcohol, ammonia, ether, camphor, musk, etc. The other comprises drugs of recognized value, known for

their acton on the cardio-neuro-vascular apparatus, acting either on the muscular or nervous system, or on both in varying degrees. It includes atropine, caffeine, convallaria, digitalis, sparteine, strophanthus, strychnine, the suprarenal substance having as its active princple adrenalin, and various other less known drugs.

Of those belonging to the first group, alcohol still holds with many the premier place as the stimulant *par excellence*. It possesses some undoubted advantages, such as rapidity of action, etc., but its exhibition requires frequent repetition, and it is not well tolerated by many patients. The stomach more often than not rejects it, and such rejection is a warning that should not be lightly disregarded. Although its immediate effects on the circulation are well marked, they are of transient duration, and frequently repetition fails to keep up the circulation. Moreover, it does not quiet the delirium of plague, a complication that is so constant and so depressing to the patient, endangering his life. Any line of treatment that places its sole reliance on large and frequent doses of alcohol as a cardiac stimulant during day and night, combined with sedatives to control the delirium, is far from satisfactory. Under the influence of alcohol the delirium becomes more violent and less easily controlled, and as the system does not readily respond to the sedatives administered, serious depression results, and the patient sinks into the condition of coma-vigil. The eyes are staring and wide open, with either a fierce or vacant look; of sleep or mental rest there are no signs, and the powers appear to be at a low ebb.

In spite of all these manifest disadvantages, it cannot be denied that alcohol has had a fair and extensive trial in the treatment of plague, and the verdict on the whole must be pronounced unfavorable to its routine use. And the more so now that we know of other cardiac remedies of great stability, which, whilst possessing all the good qualities, and even better than those of alcohol, have none of its disadvantages. For the above reasons, and after prolonged trial in various doses, small, medium, and large, during six epidemics, it has had to be ultimately abandoned as the routine treatment in plague at the Arthur Road and Maratha Hospitals. If it is at all used, it comes in well as an occasional restorative, or in those cases where patients are addicted to it, or during convalescence. The rum and brandy bill has thus been greatly curtailed, with mutual benefit to the patient and the municipal treasury.

Ammonia, ether, camphor, musk, etc., have also been largely used, but they, too, are of temporary benefit, and cannot be assigned a prominent place in plague treatment. Ammonia and ether do well as occasional stimulants; but the latter when exhibited by the mouth upsets the stomach, and if used subcutaneously gives rise to abscesses and necrosis. Camphor has been largely extolled, especially in Germany and Austria, as a cardiac stimulant in typhoid and typhus fevers. Dr. Curschmann, of Leipzig, speaks highly of it.

Camphor has not been used with frequency in plague, but whenever applied it has not shown the same results as in typhoid. The difference in the essential nature of the two diseases, and the rapid and more extensive degenerative changes in the heart muscle in plague as contrasted with the slower process in typhoid, might well account for this difference. As a temporary stimulant, however, it is undoubtedly useful, but whether its continuous use day after day, and with such frequency, would be entirely harmless has yet to be determined.

Turning now to the second group, there are many valuable drugs of established as well as reputed value. It is beside the purpose of this paper to recount all the observations at the Arthur Road and Maratha Hospitals, extending over eight epidemics of plague and comprising over ten thousand cases, that have come under the personal observation of the writer. Suffice it to state that various cardiac remedies have been used singly and in different combinations throughout the period, both with and without alcohol. Overstimulation was avoided for the reasons stated in the earlier part of this paper.

Of the drugs comprised in the second group, all have been used with varying success by the mouth, as well as subcutaneously. To the Arthur Road Hospital during the first five epidemics, and subsequently to the Maratha Hospital, must be ascribed the credit of very exhaustive

and painstaking observations in the use of various cardiac remedies. The former institution was the pioneer in introducing the extensive use of hypodermic medication in the treatment of plague, and which has now been so largely adopted by the profession. Atropine, caffeine, convallaria, digitalis (powder, infusion, tincture), sparteine, strophanthus (tincture and strophanthine), strychnine, and the suprarenal substance, Parke, Davis & Co.'s adrenalin chloride solution, have all been extensively tested. After a long series of observations the following combination of cardiac remedies—called the "stimulant injection"—was found to be the safest and most efficacious, not only in stimulating the heart, but also in keeping up sustained action until complete recovery:

℞ Sol. caffein. sod. salicyl., min. x;
Spartein. sulph., gr. ss;
Liquor strychninæ, min. ijj;
Liquor atropinæ (B. P.), min. ss;
Spt. vini gallici, q. s. ad min. xx.
Misce ft. injectio hypodermica.

This injection was used in doses of 20 minims, repeated every six, four, or three hours, according to the character of the pulse. Whenever the pulse did not sufficiently respond after three hourly injections, it was noticed that if used with greater frequency it had no better effect. Owing to the well-known tendency of caffeine to produce and keep up wakefulness, it was at first omitted during the night, and subsequently it was found that, in the presence of other drugs, it could be dispensed with altogether. For the last eighteen months, therefore, the formula in use has been as follows:

℞ Spartein. sulph., gr. ss;
Liquor strychninæ, min. iij;
Liquor atropinæ (B. P.), min. ss;
Spt. vini gallici, q. s. ad min. xx.

It has been the experience of many observers that a certain amount of tolerance to powerful drugs becomes established by continuous usage, and that the effects observed at the beginning are not kept up to the same pitch later on. This holds good to a certain extent with cardiac remedies in plague also, but other factors besides tolerance complicate matters. It is probable that the slowly advancing cardiac degeneration, as also lessened absorption from the stomach or the subcutaneous cellular tissue, play a by no means unimportant rôle in inhibiting their action. Under such circumstances the danger of pushing such a combination becomes sufficiently obvious; and so also the need of gradually decreasing its frequency and subsequently stopping it, so soon as the heart is found to recover itself. Realizing therefore the limitations of this combination and with the view of supplementing its action, a solution of camphor was introduced. It was used about two to four times a day alternately with the above. This line of treatment, with the almost total exclusion of alcohol, was carried out during a period of sixteen months, in the course of which 1749 patients were treated at the Maratha Hospital with a mortality rate of 77.49 per cent, which was lower than the average of the previous four years by about 5 per cent.

So far the results were not altogether unsatisfactory, having regard to the virulence of the local epidemics, as also to the class of patients treated and their unusually late—in the majority of cases too late—admission into the hospital. But they did not go far enough, and it appeared that an ideal cardiac stimulant that would uniformly sustain the heart's action and carry the patient through was still a desideratum. It was under these circumstances that the suprarenal substance recently introduced to the notice of the profession as a vasoconstrictor and hemostatic, and subsequently alleged to possess a specific action on the heart also, claimed notice. Merck's extractum suprarenale hemostaticum was used tentatively over four years ago, but the difficulty of manipulation and frequent large subcutaneous injections of its solution militated against its routine use. Then Messrs. Parke, Davis & Co., of Detroit, brought to the writer's notice the alkaloid adrenalin, discovered in their laboratory by Takamine, in the form of 1 per 1000 solution of its chloride. It was claimed to be non-poisonous, non-cumulative, non-irritating, and stable, to possess the property of raising the blood-pressure, and of exerting the same effects on the heart as digitalis. Its use in plague therefore readily suggested itself, and with this object a series of observations were commenced at the Maratha Hospital during the last epidemic, and have been continued up to the pres-

ent time. The solution was used by the mouth, and also subcutaneously mixed with an equal proportion of normal salt solution. Some patients were treated by adrenalin alone; but the largest number of observations comprised its use as a supplement to the stimulant injection, without caffeine, described above. The latter procedure was necessitated by the shortness of the local stock, and the consequent contingency of the abrupt stoppage of our observations. The stimulant injection was administered hypodermically every three, four, or six hours, according to the gravity of the case, and the adrenalin solution administered by the mouth in dose of 2½ minims every two hours. A few cases received as much as ten minims hypodermically. A marked change for the better was soon apparent in the condition of the patients after they were put under adrenalin. The pulse tension was increased and well kept up, and the influence on its frequency and irregularity was noticeable. In fact a good supplement was found in adrenalin capable of acting and coördinating with the stimulant injection.

THE DIGESTION OF CASEINS, AND ITS RELATION TO CERTAIN PROBLEMS IN INFANT FEEDING.

In a valuable paper contributed to the *Medical Record* of March 4, 1905, SOUTHWORTH points out that the use of alkaline antacids, lime-water, and bicarbonate of soda, which were introduced into food mixtures for young children in order to make acid cow's milk correspond to a supposed alkaline breast milk, was based upon a fallacious theory, since the use of a more accurate indicator, phenolphthalein, has now shown breast milk also to be faintly acid. He has also shown that the use of 5-per-cent lime-water and one grain sodium bicarbonate to the ounce, which is one ounce of lime-water or 20 grains bicarbonate to every 20 ounces of pure milk or food mixture, as advised by certain authorities, was an erroneous application of the theory to practice, inasmuch as the actual proportion of the alkali to the quantity of milk varies, of course, with the number of ounces of milk in the 20-ounce mixture. This results in a high alkalinization of the small amount of milk used in the mixtures for young infants, and a gradually decreasing alkalinization as the mixtures are made stronger by the addition of larger quantities of milk. The true explanation of the utility of alkaline antacids must therefore be sought in some other direction, and is to be found, aside from certain individual effects which each alkali produces upon the milk and in the neutralization of any lactic acid formed in the milk after it is drawn, in the fact that in the presence of an alkaline reaction the rennet ferment is retarded or inhibited or delayed, allowing the escape into the intestine of part, at least, of the still fluid milk. This tends to divide the labor of digestion, to a degree depending upon the amount and kind of alkaline antacid used, between the stomach and intestine, and may thus avert the overtaxing of the stomach with subsequent disastrous effects upon the entire gastrointestinal canal.

Peptonization of milk is a well recognized measure for increasing the digestibility of its casein, but it is too frequently employed without knowledge of the principles involved. The term "peptonization" itself is perhaps an unfortunate one, since its root suggests to many digestion by pepsin, which can only take place in an acid medium and alone represents typical gastric digestion. This view is still encountered with great frequency among all classes. "Pancreatization" and "pancreatized milk" would have been better terms, since the preparation used for this purpose contains 5 grains of extractum pancreati and 15 grains sodium bicarbonate. The process is therefore analogous to an intestinal digestion in an alkaline medium. Upon the length of time during which the ferment is allowed to work upon the milk before its activity is checked by heating or cooling depends the amount of casein which is changed into a non-coagulable form, but whether much or little is transformed the alkalinity caused by the bicarbonate of soda, especially if the food has been subsequently heated, restrains the rennet and acids of the stomach to a larger or smaller degree from playing their usual part in the digestion of the remainder, and so prevents to any considerable extent the formation with the unaltered casein of tough acid paracasein curds. In short, gastric digestion is more or less cut out, and the intestine receives material

upon which its own work of digestion is already more or less advanced.

With this explanation in mind, no practitioner will repeat the not very infrequent error of attempting to produce some sort of "peptonization" by adding pepsin to the child's bottle, for since commercial pepsin invariably contains the rennet ferment the result is to cause a clotting of the calcium casein in the form of calcium paracasein, which is really a precipitate of "junket" or "curds and whey."

THE TREATMENT OF BRIGHT'S DISEASE.

In the course of an article in the *Clinical Journal* of February 22, 1905, BRADFORD states that the diet of a person suffering from chronic Bright's disease should, of course, be constructed on the principle of diminishing as far as possible the work of the kidney, always bearing in mind that whatever we do considerable quantities of urea and of salts must be excreted, and that by diminishing the diet too much we only lead to the same results as those seen in starvation, namely, that the patient has to draw on the tissues of the body. A broad distinction ought to be made between the cases in which, owing to the presence of the accompaniments of renal disease or owing to the severity of the renal lesion, the patient is so ill that he has to be confined to bed, and the class of case in which, notwithstanding the presence of a renal lesion, possibly also severe, the general condition is such that the patient is able to be up and about or even engaged in his avocation. If dropsy or uremia be present, in however mild a form, it is obvious that the patient must be put to bed and kept on a low diet of milk only, though doubtless it may be advisable to dilute this.

Our difficulties, however, do not arise with cases of this description, but rather with those in which dropsy and uremia are absent, the cardiovascular changes and the urinary changes marked, and the general condition of the patient such that he feels moderately well and probably able to be up and about and engaged in his work. Such cases should not be restricted to a milk diet, however abundant, because of purely theoretical considerations as regards the influence of this on albuminuria. They should be given a diet containing a moderate amount of proteid matter, and in the opinion of the author, in selecting the proteid matter, we should be guided mainly by consideration as to its digestibility rather than by theoretical considerations or even practical observations on its effects on albuminuria. Thus it is very common to order such persons moderately liberal quantities of white fish. This can only be justified from the point of view of the digestibility of the fish, since fish is relatively rich in nitrogenous extractives. If such a patient is able to keep up his strength and general nutrition on such a diet, well and good; but most persons fail to do so. Again, it would seem that there is no special virtue to be attached to what is called white meat, except that chicken, doubtless, is more easily digestible than red meat. The author's point is that such articles of diet as so-called white meat and fish have no special virtues as regards diminishing the work of the kidney; such virtues as they possess arise from the fact, as stated above, that they are relatively easily digestible and suitable articles of diet for most invalids or convalescents. Many observers in this country have shown that a more liberal diet, including the ordinary varieties of meat commonly eaten, may be used with great advantage in chronic Bright's disease, provided such conditions as dropsy, uremia, etc., are absent, and provided, of course, that they are not taken in excessive amount. Many a patient with chronic Bright's disease will do better on a diet of mutton chops than on one of milk, although it is possible that on such a diet the daily loss of albumen may be somewhat increased.

In the author's opinion the proteid food should be limited in quantity and careful attention paid to its digestibility. It is probably advisable to forbid twice-cooked meats, such as smoked ham, tongue, etc., simply on the ground that the latter are necessarily far richer in proteid matter than ordinary butcher's meat. There can also be no doubt that elaborately cooked food, and tainted food, may be extremely dangerous, and it is possible even that uremia, or at any rate grave toxic phenomena, may be brought about by indiscretions in this respect. There can also be no question that meat soups and meat extracts of all kinds are harmful, and the author is inclined to think that all stimu-

lants are harmful, and he has been unable to recognize any special virtues in the gin that is so frequently ordered. It may be advisable, where dropsy is present, to limit as far as is practicable the ingestion of water and of salts, as it would certainly seem that both may lead to an increase in the dropsy, and meat extracts may be harmful, not only from the fact that they are rich in nitrogenous extractives, but also owing to the abundance of salts present.

ERYSIPELAS TREATED BY INJECTIONS OF ANTISTREPTOCOCCUS SERUM.

In the *Medical Record* of March 4, 1905, AYER reaches the following conclusions:

1. That the administration of antistreptococcus serum shortens considerably the course of an uncomplicated attack of erysipelas.
2. That it tends to inhibit extension of the disease.
3. That it has a strikingly beneficial effect upon the general condition of the patient, reducing the temperature, pain, and discomfort incidental to the disease.
4. That it rapidly reduces the pathological leucocytosis.
5. That it prevents or suppresses febrile albuminuria.
6. That its use is attended with no danger, even in large doses.
7. That the only disagreeable symptom referable to the serum observed by the writer is a transient eruption which occasionally occurs at the site of the injection.
8. That the efficacy of the serum treatment is in direct ratio to the length of time which has elapsed between the onset of the disease and the first injection of serum.

THE SERUM THERAPY OF TUBERCLE.

The *Medical Press* of February 22, 1905, reminds us that during the past twelve months the method of serum treatment for tubercle most prominently before the profession has been that put forward by Marmorek. He held the view that tuberculin was not itself the toxin of tubercle, but that it was a bacterial product which served to excite tubercle bacilli to the production of a toxin. This being so, one could not expect any satisfactory result from treatment by antitubercular serum. By the growth, however, of tubercle bacilli in a special medium, "leucotoxic serum," the preparation of which is very complicated, he has been able to produce a toxin which causes definite lesions in horses and other animals. To this toxin an antitoxin is produced in the blood of horses. It will be remembered that when Marmorek published his investigations a year ago, they met with hostile criticism from many French observers. The later reports, however, both in England and Germany, have been more favorable. Latham, Richer, and Fry all think well of the action of the serum, and advise further trial. More recently Friedman has separated a culture of tubercle bacilli from the lung of a turtle, and this culture is so innocuous to higher animals as to be available as a vaccine. In addition, it causes so high a degree of immunity in the ox that the serum of the latter may be used as an antiserum. No trials have yet been made in the human subject, but the prospects are most promising.

SOME NEW VIEWS OF INFANT FEEDING AND THEIR PRACTICAL APPLICATION.

CHAPIN in a valuable paper contributed to *American Medicine* of March 4, 1905, which has the above title states that analyses of milks have shown that their composition is closely related to the rapidity with which the young animal grows, milks rich in solids being for animals that grow very rapidly. For this reason an analysis of human milk will show about how much of the various food elements are needed for proper development. The tissues of the body are made up principally of proteid, which must be supplied in the food, as the organism cannot construct proteid from the other food elements. Therefore it is wrong to feed .80 per cent proteids as a routine measure when human milk contains from 1.50 to 1.75 per cent proteid. Anemia and rickets will in all probability be the result of such a method of feeding, although if sufficient fat and sugar are given along with such a small quantity of proteid the infant will probably become fat and gain in weight. It is not safe, therefore, to judge the value of a food solely by the fact that it causes gain in weight. This leads up to classify-

ing feeding cases, for sometimes it is necessary to feed low amounts of proteids.

There are two sharply defined types of cases to be considered: (1) Those in which there is no indigestion, but in which the mother cannot nourish the infant. (2) Those in which indigestion has to be treated. The problems before the physician in these two kinds of cases are entirely different. In the plain feeding cases he has only to select food that will have the same food value as mother's milk and which will develop the digestive apparatus; it is in these cases that a knowledge of the principles of home modification of cow's milk is required. In the cases in which indigestion is the prominent factor, little is to be expected of fine variations of milk mixtures, as oftentimes the best results are obtained by stopping milk entirely for a time, and substituting other forms of food until the indigestion is corrected, when milk modifications may be tried as for a healthy infant.

In modifying cow's milk it is diluted because it contains more proteid than an infant needs, and in addition the proteids of cow's milk are difficult of digestion by the infant, so any excess of proteids only throws unnecessary work upon the already overtaxed digestion. As diluting the milk reduces the fat and carbohydrates in the milk to below what the infant needs, these elements are added. The successful modification of cow's milk consists in feeding as much of the heat and energy-producing elements of food (fat and carbohydrates) as the infant needs and which it can usually digest with little disturbance, and gradually working up the quantity of proteids from an amount a little below the actual needs of the infant to its full requirements. This is done because of the difficulty most infants experience in digesting as much proteid derived from cow's milk as is found in human milk.

If the difference in the properties of human and cow's milk actually did lie only in the relative quantities of casein present it would be a very simple matter to make human milk from cow's milk, but the casein of human milk differs radically from that of cow's milk, and there is no known method of making them alike. Since the important part that casein plays in the development of the stomach has become known, it is realized that it would be a great mistake to feed the proteids in a soluble form, except temporarily, when such soluble proteids or peptonized milk may be used. The real problem then is to make the casein of cow's milk suitable for an infant's digestive tract. There are two methods of doing this which have been advocated. One is by the addition of alkalies to the food, and the other is the dilution of the milk with gruels.

When it was supposed that a fundamental difference between human milk and cow's milk was that human milk was alkaline and cow's milk acid, it seemed plausible to add some alkali to cow's milk for infants. But when examination was made of this subject it was found that the teaching was to add to food containing fresh cow's milk more alkali than would be necessary to neutralize it if it were actually sour. One or two grains of sodium bicarbonate to an ounce of food for a young infant is more than enough to neutralize the food, even if it has soured. No effervescence of gas takes place when the soda is thus added, which shows that there was no acid in the food that needed to be neutralized. What, then, is the effect of adding alkalies to the infant's food?

It is briefly this: the ferment of the stomach will not curdle the milk in the presence of alkalies, and no stomach digestion can take place in the absence of acid; so long as there is alkali in the food digestion will not take place in the stomach, but the food will pass into the intestine in a fluid condition, and the aim of nature in developing the stomach may be defeated unless a perverted gastric secretion is produced. There are times in an infant's life when antacids are very beneficial, just as in the case of adults, but it does seem to be contrary to all accepted theories of gastric digestion to be constantly adding strong antacids to the food and thereby retarding the action of the gastric juice.

By the use of gruels in diluting milk we only follow nature in supplying internal teeth, so to speak, which break up the curd of cow's milk and expose more surface to the normal digestive secretions. The objection raised by some to putting starch in the food may be offset by the use of digested gruels, which supply considerable proteid in a finely divided form, which acts as the attendant. The saliva naturally acts on starches before they

reach the stomach, so in supplying these digested gruels we are only anticipating nature, and doing what the infant cannot thoroughly accomplish at an early age. Artificial feeding is itself anticipating nature and is in its way unnatural, as there is no real method of actually following nature in infant feeding except by maternal feeding or the use of a wet-nurse. In a word, by the use of gruel diluents we encourage the use of the digestive apparatus; by using alkaline diluents we retard or pervert the functions of the infant's stomach.

ALCOHOL IN DISEASE.

In discussing a paper upon this subject in the *Medical Record* of March 4, 1905, PEABODY states that very little of the recent work by scientists relates to alcohol except as a food, and he would speak of its use as a therapeutic agent in disease. He refers to its use in angiomata, in carcinomata, and as a disinfectant of the skin, because of its powers of permeation. Alcohol has been applied to the abdomen on compresses soaked in it in cases of peritonitis. Dr. Peabody has found it very efficacious in peripheral neuritis and phlebitis, as well as in abscesses such as furuncles and allied conditions, but to be effective it should be applied early. It was also of value in phlegmonous inflammations. Its power of relief was best explained by its powers of dilating the blood-vessels and relieving conditions of pressure. The alcohol was used by soaking cheese-cloth compresses, applying them to the parts, and covering with gutta-percha paper and cotton-wool. The compresses should be saturated. This should be used cautiously in cases in which the epidermis is very thin.

Its antidotal powers in cases of carbolic acid poisoning are referred to. During recent years, according to the author, the tendency has been to recede from a very great use of alcohol as a therapeutic agent, and many physicians have refused to use it in any cases. It is a fact already proven that large doses of alcohol render animals less resistant to pathological conditions. Dr. Peabody believes that in alcohol we possess the best means of stimulating the heart. Necessity for its use might arise from some primary weakness and enfeeblement due to febrile diseases. Often this agent has been prescribed when not justified. The use of alcohol should not be abandoned because of the fact that it has been much abused. The symptoms of intoxication are due to its paretic effect upon the cerebral cortex.

When all has been said against alcohol, it still remains that it has a place in general applicability. In cases of high, persistent temperature, with delirium, nervous prostration, with a pulse rapid and easily compressible and dicrotic or irregular, the condition always calls for the administration of alcohol. Its dose should be half an ounce of whiskey every three, four, or five hours to begin with, but its continuation should stop as soon as it is no longer productive of good. When the patient approaches the condition of health, he is cautioned against its habitual use. When the tongue becomes less dry, and the skin moist, when the wakefulness and delirium become less marked, and when the powers of assimilation improve, then the further giving of alcohol should cease. He subscribes to Meltzer's saying: "Alcohol in health is often a curse; alcohol in disease is mostly a blessing."

MUCOUS COLIC.

KEMP gives the following advice in *American Medicine* of March 4, 1905. He says there are certain mixed cases, in which there is a catarrhal colitis, with a mucous colic later engrafted upon it. Among such we can classify those that may apparently be caused by excessive bicycling, or horseback riding, enlarged prostate, uterine fibroids, adhesions from appendicitis, etc. In some of these conditions a local congestion of the rectum, or sigmoid, can be detected, and careful investigation will demonstrate that the attack first starts as a simple prostatitis, or colitis. Constipation has previously been present. Consequent autoinfection, nervous symptoms, and finally mucous colic result. Careful examination will reveal that these patients have had an existing ptosis of stomach and colon—quiescent, with no resulting symptoms, but as a result of irritation, causing favorable conditions, a mucous colic will develop. The correction of such sources of irritation is undoubtedly rational, and will thus readily explain the improvement which at

times occurs after operative procedure. The existence of the "mixed cases" will undoubtedly "clear up" the hitherto apparently diverse opinions as regards the etiology of this disease.

In such cases, with a coexisting catarrhal colitis, irrigation with nitrate of silver, 1.3 to 2 grammes (20 to 30 grains) to two quarts of water, and followed by saline solution, or with resorcin, .65 to 1.3 grammes (10 to 20 grains) in two quarts, is useful. The author has often found enteroclysis with demulcents, such as weak flaxseed tea, or 178 or 236 cubic centimeters (6 or 8 ounces) of a saturated solution of gum arabic, or the same held in suspension and added to two quarts of warm water, of value.

In the case of pure mucous colic he employs only normal saline solution, or the demulcents, for removal of the mucus, since the condition is due to hypersecretion and not inflammation, and avoids silver irrigations in such cases, since irrigations of silver, tannin, alum, etc., can produce an artificial hypersecretion. Small doses of olive oil, or of castor oil, in capsules, seem of value for the constipation, and improve the tone of the mucous membrane of the intestine, providing they do not increase the patient's dyspeptic symptoms.

Nux vomica or strychnine is of service in increasing the tone of the gastrointestinal tract and the general muscular system. Resorcin, 5 grains, or sodium benzoate, 5 grains to 10 grains, or bismuth salicylate, 5 grains to 10 grains, should be given if there is much gastrointestinal fermentation. The use of the following, recommended by Dr. William H. Thomson, in the mixed cases for the treatment of the true catarrh gives good results:

℞ Silver nitrate, 32 Gm. (5 dr.).
Resin of turpentine, 89 Cc. (3 dr.).
Potash solution, 30 Cc. (1 dr.).
Pulverized licorice, sufficient quantity to make pills soft.

Divide into 60 pills. Dose: three pills three times daily.

Copper sulphate, .02 gramme (¼ grain), three times daily, may be substituted later. Fowler's solution of arsenic, in .06 cubic centimeter (1 minim) dose, three times daily, has also been found useful in these mixed cases.

General Treatment.—Exercise and outdoor life, as golf, etc., to strengthen the abdominal muscles, are important. During winter weather fencing is useful. The general nervous system must be toned up, and anemia should be corrected. An excellent combination is a fresh Blaud's pill (iron) .32 gramme (5 grains), made soft with honey; in each pill is incorporated 2 minims Fowler's solution of arsenic, and extract of nux vomica 8 milligrammes (⅛ grain), or 1 milligramme (1/60 grain) of strychnine. The glycerophosphates, or phosphorus compounds, are of value for the nervous conditions. Hydrotherapy, massage, and electrotherapy may be used.

Diet.—Fluid diet, milk, kumiss, broths, gruels, etc., should be used during the attacks. Between attacks Von Noorden advocates a very coarse diet—bread containing plenty of chaff, vegetables rich in cellulose, fruits with skins, etc., etc.—to form ballast for the bowel. He claims excellent results. It is the writer's custom to determine the condition of the stomach. Like Einhorn, he has found cases of achylia gastrica in mucous colic, but more cases of hyperchlorhydria and a few of hypochlorhydria. These conditions should be treated in each individual case and appropriate diet instituted. We should, however, give our patient abundant nutrition in the form of a mixed diet. Cod-liver oil and fats are of value when they can be assimilated. The addition of healthy fat, with increase in weight, means the cure of the patient.

ON THE USE OF TYPHOID FILTRATES IN THE TREATMENT OF TYPHOID FEVER.

An experience with twenty-two cases of typhoid fever treated with the filtrate of a bouillon culture of the typhoid bacillus leads RICHARDSON, who writes in the *Journal of Experimental Medicine* for February, 1905, to hope that in this fluid we have an agent of therapeutic value. This hope is based on the following observations:

The filtrate of a typhoid bouillon culture grown for six weeks at the body temperature has little, if any, toxic power. Two cubic centimeters injected intraperitoneally into guinea-pigs of two hundred and fifty grammes weight causes no discomfort beyond a minimal temporary loss in weight. Such injections produce, how-

ever, a certain amount of immunity, not only in the guinea-pig, but also, when given subcutaneously, in the healthy human subject.

Typhoid patients, on the contrary, may react quite sharply to similar small injections (two cubic centimeters), such reactions being characterized by a chill, rise in temperature, and increased frequency of pulse and respiration.

This reaction has occurred at least once in one-half the cases thus treated, and is to be explained possibly thus: The filtrate is non-toxic, but contains other portions of the bacillus, such as, for instance, the envelope, which substances, though harmless in themselves, stimulate the body cells to the production of an excess of specific antibodies. These, then, attack the bacilli with which the patient is infected, and by setting free their intracellular toxins bring on the chill and its accompanying manifestations. This reaction being, therefore, according to this theory, the evidence of bacillary destruction is not necessarily a phenomenon to be avoided, but is, if not too severe, rather a good omen.

Experience thus far seems to show (as might be expected) that the best results are to be obtained in cases not yet too severely damaged by the typhoid poison. Tissues in a state of hyperintoxication cannot be expected to respond emphatically to further stimulation. Indeed, if they could respond, such excitation might be contraindicated as producing, possibly, toxin in sufficient excess to be a source of danger. The treatment is best suited, therefore, to cases in which the individual can, in the first instance, respond to extra stimulation, and in the second instance can stand a temporary hyperintoxication resulting from an increased destruction of bacilli.

According to this theory, then, we should expect, as a result of treatment, a temporary increase in the severity of the symptoms, due to the toxins contained in the destroyed bacilli, but that, following this check in their growth, the organisms would succumb gradually to an increasing immunity, with a corresponding amelioration of symptoms. The best conditions for the use of this treatment should, therefore, be seen in cases of threatened relapse, be this of the true type or of the intercurrent variety, for in either case the individual would have a comparatively large store of acquired immunity to call into action to check a reinfection in its earliest stages. Less favorable, but still hopeful, conditions should be found in the beginnings of the original disease, when the natural immunity, still unexhausted, could be called upon for extra exertions in crushing a nascent infection. Finally, comparatively little good should be expected, indeed harm might be done, if an individual already hyperintoxicated were subjected to the effects of an exaggerated destruction of bacilli.

In this series of twenty-two cases there occurred two deaths, one from pulmonary embolism and one from hemorrhage, both mechanical complications for which the writer does not hold the treatment in any way responsible.

The other twenty cases have, in a general way, corresponded in their course to the theory above outlined. Unfortunately most of the cases did not come under observation until the disease was well advanced. Five early cases are especially interesting as showing what seems to have been a shortening of the disease:

Case 1.—Injections begun on the tenth day; normal temperature on the eighteenth day.

Case 2.—Injections begun on the eighth day; normal temperature on the eighteenth day.

Case 3.—Injections begun on the seventh day; normal temperature on the twelfth day.

Case 4.—Injections begun on the eighth day; normal temperature on twentieth day.

Case 5.—Injections begun on the twelfth day; normal temperature on seventeenth day.

Finally, it is apparent that the value of this method of treatment cannot be fully determined without much further experience with a larger series of cases.

ERGOT AND ARSENIC IN CHOREA.

RIVIERE reminds us in the *British Medical Journal* of February 18, 1905, that in the same journal of July 18, 1903, Dr. Eustace Smith introduced to general notice the value of ergot in the treatment of chorea. Dr. Smith had used this treatment in his wards at the Shadwell Children's Hospital for a long period previous to that communication, and having

been favorably impressed with what he saw of it, the writer of this paper determined to give it a systematic trial among out-patients, where the favorable surroundings of in-patient treatment are not present to throw doubt on the action of the drug. Accordingly, between December, 1902, and May, 1903, he made notes of some thirty-five such cases coming under his care in the out-patient department at St. Bartholomew's Hospital, and has since treated a number of cases both there and at the Shadwell Children's Hospital. It is the result of this treatment that he now desires to record.

It will be seen that the determination of drug action on out-patients has certain advantages and certain disadvantages. The chief advantage is that the patient remains in the same general surroundings, so that whatever changes arise may more fairly be attributed to the effects of drug treatment. The main disadvantages are the risk that the medicine is not administered (not a serious one), and the difficulty of giving sufficiently powerful doses without fear of poisoning. With certain diseases, and especially with chorea, comes in besides the fallacy of spontaneous temporary or permanent improvement, and the various changes to be observed from week to week in all such cases, apart from treatment. In consequence of these sources of error, and the great variety in the types of cases treated, the writer has decided that a statistical table of the results of treatment would be valueless, a general statement of results and impressions being more likely to prove reliable. The ergot was given in doses of one drachm or one and a half drachms of the fluid extract thrice daily, with a little strychnine, as recommended by Dr. Eustace Smith. These doses gave rise to no symptoms of poisoning, nor, indeed, to any physiological effects that were appreciable to the author. Among such out-patients he has found no signs of arterial spasm, as indicated by slowing of pulse, increase of pulse-tension to palpation, or accentuation of the aortic second sound. The slowing of pulse, perhaps the most delicate sign, is of course valueless among child out-patients owing to the disturbing effects of temporary excitement or exertion.

The writer's early conviction was that the ergot mixture had a marked curative effect on certain cases of chorea, and that in other cases the disease remained unchanged or became worse. His results show that about half of the cases were rapidly improved or cured by this means, and that most of the remainder improved when arsenic was substituted. He has endeavored, but with negative results, to separate by some clinical features the type of cases which responds to treatment by ergot. Several divisions of choreics may be made, all more or less arbitrary. Thus, cases may be divided into rheumatic and non-rheumatic, into those with much and those with little voluntary control, into those with little or much movement, into first attacks and later attacks, etc. To none of these divisions do the ergot-cured cases belong; examples of such may be found in all these classes. That it is the drug treatment which acts in these cases there is no doubt, since often if it is stopped the case relapses, and is again cured or improved by its readministration.

When the ergot treatment was found to have failed, arsenic was given, and in many cases improvement dated from that moment and progressed slowly to cure. These may have been cases where arsenic would have benefited from the first. On the other hand, in two cases a curious thing happened. Their first ergot treatment was ineffectual, arsenic made them worse, but on returning to ergot after arsenic had been tried they were immediately improved or cured. This suggested to the author the advisability of trying ergot and arsenic in combination. This he did with a mixture containing one drachm of extract of ergot and three minims of liquor arsenicalis, these doses being increased as seemed desirable. He has used this mixed treatment for the past year, and has had such desirable results with it that he has been tempted to make this communication for the purpose of recommending it. Its good effects embrace, no doubt, three kinds of cases: (1) Those that are benefited by ergot; (2) those that are susceptible to arsenic; and (3) those, perhaps few in number, where, as in the two cases already mentioned, the one drug seems to supplement the other.

The writer further says that among out-patients there are few cases which remain unbenefited by this treatment, and

confesses to a feeling of great helplessness when he meets with such. In the majority the improvement begins at once.

The unbenefited cases consist mainly of those violent choreas for which so little beyond isolation can be done. Ergot and arsenic, given in such doses as one dares prescribe for out-patients, have no beneficial effect, and admission to hospital soon becomes imperative. The effect of ergot on those violent and protracted cases which gain admission to the hospital wards has been already described by Dr. Eustace Smith in the article to which the author gave reference at the beginning of this communication.

THE TREATMENT OF THE EAR COMPLICATIONS OF SCARLET FEVER.

JARECKY gives this advice in an article in the *Medical Record* of February 25, 1905.

For the swelling, itching, etc., of the external ear, usually a mild dusting powder, as starch, talcum, or magnesium carbonate, either alone or in combination, suffices.

In middle-ear disease pain is best treated with hot-water irrigations, using from a pint to a quart in a douche jar or bag about one foot over the head, the stream being directed to the sides of the canal. A hot-water bag applied to the ear also aids. A hypodermic injection of morphine sometimes shortens an attack. Local abstraction of blood with an artificial or natural leech over the tragus may control the trouble. Watery solutions of cocaine, atropine, or tincture of opium dropped into the canal occasionally give relief.

Oil should never be used. Saturating cotton with chloroform and blowing the vapor into the meatus sometimes acts nicely. The nose and throat should be swabbed or irrigated and kept clear of mucus. The bowels should be moved freely. A gentle inflation will sometimes dispel a plug of mucus from the origin of the Eustachian tube, and allow drainage. The author has observed relief at times with one of the coal-tar analgesics, dose according to the age. A 10- to 12-per-cent solution of carbolic acid in glycerin soaked in a piece of gauze and applied directly to the drum membrane, by its exosmotic action, has frequently given very satisfactory results. It can be changed every six to twenty-four hours as indicated.

If the attack is not aborted and pain does not stop, the drum membrane will show signs of active congestion and even bulging. This should not be allowed to rupture spontaneously, as the perforation is jagged, does not heal well, and always causes loss of audition. Paracentesis should be performed immediately. There should be no delay. The pain will be relieved, the prognosis is more favorable, as the drum hears better, and what is most important the system is relieved of infectious material as soon as possible. For adults and older children the author uses general anesthesia with ethyl chloride or nitrous oxide while operating. Infants can be held without much difficulty. With local anesthetics the author has had no satisfactory results. Cocaine is not absorbed. Anilin oil and cocaine have caused toxic symptoms. Equal parts of menthol, carbolic acid, and alcohol have been only occasionally successful.

To operate, the canal should be thoroughly cleansed with a solution of 1:4000 bichloride or mopped out with peroxide of hydrogen. Then with good illumination the knife should pass through the bulging portion, or from the point at the center of the posterior section, to the lower border of the membrane close to its bony attachment by a curved incision —that is, through the posterior inferior segment. At the same time the author incises the mucous membrane of the internal tympanic wall and the posterior superior canal for one-fourth of an inch, down to the bone, securing thorough depletion.

If the membrane has ruptured spontaneously one should always examine to see if there is sufficient drainage; if not, a free incision should be made, including the perforation in its path. The author prefers a straight knife, but one at an angle can be used. The instrument should be exceedingly sharp so as to pass through the membrane by its own weight. After the operation he irrigates with bichloride 1:5000, packs the canal tightly with sterile gauze, puts a pad of cotton over the ear, and retains the whole with a bandage, which he usually leaves undisturbed for twenty-four hours, directing the patient to lie on the side affected to

facilitate drainage. When the dressing is removed he orders irrigation in accordance with amount of discharge. Some cases heal in a few days.

The discharge, which is at first serous, later often becomes purulent and profuse. The cleansing may be needed every two or three hours. Sterile water, decinormal salt solution, saturated solution of boric acid, or a solution of 1:5000 or 1:10,000 bichloride can be used. Cotton used in the external canal should be changed frequently. These cases can also be treated by the dry method, when they can be closely watched. The ear is cleaned, dried, and strips of gauze daily introduced for drainage. In the majority of cases thus treated excellent results have been obtained.

Still a third method is to syringe the ear, use hydrogen peroxide, and syringe again. The ear is then mopped out and dried, and this is followed by repeated instillations of alcohol, diluted if painful in its full strength. The author strongly opposes the use of peroxide of hydrogen, as he has seen one case, and is almost sure two cases, of mastoid involvement due to its use.

The use of powders, as boracic acid, iodoform, etc., is excellent when discharge is slight and for irritation in the canal. Care must be taken not to block up the opening in the drum membrane. The powder may remain until moistened by the discharge.

Toward the end of the acute stage inflation with the Politzer bag or Eustachian catheter helps to get rid of pus and prevents adhesions.

If the discharge continues and a chronic condition remains the ear must be kept clean. Various astringents can be used, granulations should be cauterized, and polypi removed. If there is much exposed bone, an offensive discharge, and polypi, the safest course is a radical operation. Many a facial paralysis and dural abscess with brain involvement would be avoided by an early adoption of this procedure.

If the mastoid is involved, the author applies an ice-bag or the Leiter coil for twenty-four hours, with rest in bed, light diet, cathartics, and frequent irrigation of the canal. There must be a free opening in the tympanic membrane. If pain ceases he stops the cold for twelve hours, and when necessary reapplies it for the same length of time. If the symptoms still continue he urges operation. He gives no opiates to disguise symptoms, nor employs leeching or iodine over the mastoid, as it prevents proper examination for tenderness.

In closing his paper the author emphasizes: (1) The necessity of paying attention to the removal of hypertrophied tonsils, adenoid vegetations, and nasal obstructions in all of our little patients, so that when subjected to the strain of scarlet fever they may avoid the principal method of ear infection. (2) Owing to the rapidity with which destruction of aural tissue and extension of infection take place in this disease, as soon as the tympanum shows signs of exudation and the membrane of bulging a paracentesis should be immediately performed. (3) Repeated examinations of the ear, especially in infants and children, should be made on account of the uncertainty of the symptoms.

THE EFFECTS OF THE ROENTGEN RAY UPON CANCER.

In a paper in the *Journal of Experimental Medicine* for January, 1905, Vose and Howe reach the following conclusions: It seems that cutaneous cancer treated by *x*-ray undergoes a degeneration, not peculiar to this form of treatment, or distinguishable histologically from degeneration from other causes. The vascular changes are limited to an endarteritis; new formation of blood-vessels occurs if healing takes place, as in the process of repair elsewhere; there is an increase of elastic tissue. Mitotic forms are less abundant after treatment.

Taken as a whole the clinical cases show: (1) That the only cure of cancer by the *x*-ray is by destruction and exfoliation. This at once limits its value to superficial cases. (2) That this destructive process is a slow one and acts very superficially. Since it is well known that many essentially chronic superficial epidermoid cancers may be removed permanently by the slightest surgical procedure, that course seems preferable to the somewhat tedious treatment by *x*-ray, and as they both may fail an extensive surgical operation, if necessary, may be

undertaken more promptly in the former case. (3) That being non-selective in its action, the *x*-ray cannot be used strongly enough to effect destruction of anything but the shallowest tumors without serious injury to the overlying and surrounding tissues, or, in other words, producing such a burn as experience shows in all probability never would heal.

CONVULSIVE TIC.

PATRICK has this to say in the *Journal of the American Medical Association* of February 11, 1905, in regard to the cure of tic.

The author's own attempts have been along various lines. Some years ago injections of atropine into the affected muscles were advised. He tried them, and they made his patients worse. The muscular soreness produced by the injection simply increased the local discomfort and the patient's self-consciousness. The ordinary sedatives he has tried, and they have constantly failed in his hands, as in others. A few years ago, in a discussion before the American Neurological Association, conium was highly spoken of. In his next case the author gave it a faithful trial. At first there was some relief, but this was transient, and subsequent doses, carried to the toxic limit, accomplished nothing.

In one bad case he tried the opium-bromide treatment as advised by Flechsig for epilepsy. It was of no avail. During the course of opium the patient was not uncomfortable. When he changed to the bromide he did not take it well, and was soon as bad as ever. Once he nearly cured a bad case of many years' standing by means of hypnotism. For several weeks the case progressed in a way most satisfactory to him and wonderful to the patient. Then, contrary to the strict injunctions of his physician, the patient had a long interview with a relative. This made him more nervous, which the author at once noticed, and finally elicited the cause. His reprimand was resented. Because of his frame of mind, the following sitting was less successful than the preceding ones. The lack of success engendered lack of confidence, and the next sitting was less successful than the preceding ones. Disappointment, regret, loss of hope, despair, followed in turn, and the patient returned to his home nearly as bad as when he came.

Two years ago the author saw, in London, a case of Bastian's practically, not absolutely, cured by keeping the patient asleep most of the time for several weeks. He came home and tried the method on an old and very rebellious case. The result was gratifying. At the end of the sleep period the patient was very much better, and then, under the exercises to be mentioned presently, he continued to improve. He returned to work with only a trace of his trouble, but a perfect recovery was not obtained.

The very next time the author used this treatment dismal failure was the result. Even when the patient was asleep eighteen hours out of the twenty-four, during waking moments the spasm asserted itself with a vengeance. And as the effect of the drugs wore off, the trouble resumed its wonted severity.

The author's friend, Dr. Singer, formerly of London, now of Omaha, recently stated that in two cases he had excellent results from suspension. The author immediately tried it, but before the treatment was well under way the patient got homesick and left the hospital.

Meigs and Feindel have elaborated a system of exercises advocated by Brissaud, and have treated a great many cases in this way. Their results have been good; the method is rational and constitutes a real addition to our means of combating a most troublesome disorder. To go into detail would require a separate paper. A full description will be found in the excellent and exhaustive treatise by these gentlemen. Stated simply, the system is one of dynamic and static exercises, gradually teaching the patient to move and hold his head properly. This is no easy task. Great patience, persistence, courage, and confidence on the part of the patient are the requisites for success. While the advocates of the treatment are loud in its praises, not to say enthusiastic in their propaganda, their statements will be found to contain sundry qualifying terms and conservative cautions. It must be confessed that their reports seem to lack definite statement of complete cures.

With this, as with all other methods of treating spasmodic torticollis, the great

drawback is the patient himself. He is generally a neuropath *par excellence*. He is hypersensitive, too impressionable, erratic, poorly balanced. His enthusiasm is transient, his faith evanescent, his disappointment overwhelming, his desire paramount. Although he may be intellectually brilliant, he is mentally puerile; he cannot control himself and is most difficult to control. Just when the treatment, whatever it may be, is running smoothly, some whim, feeling, emotion, desire, or opinion of the patient intervenes to derange the whole plan and withhold success. Within an hour such a patient's whole mental attitude may be quite reversed. From hearty coöperation with his physician he changes to skepticism, distrust, mutiny, perhaps as quickly to return to allegiance and obedience.

The author's present opinion is that the soporific treatment, followed by the educational exercises of Brissaud, will be found effective in more cases than any other method of treatment. By means of veronal, trional, chloral, and bromides, the drug to be changed every few days, the patient is kept asleep nearly all of the time for three or four weeks. As the waking time increases he is shown how to practice moving the head slowly, rhythmically, and normally in every direction. He is also to practice holding it quietly in any given position. At first the exercises must be executed under supervision. Later he can manage them himself, preferably with the aid of a mirror.

ORTHOFORM IN THE DIAGNOSIS OF GASTRIC ULCER.

In *American Medicine* of February 18, 1905, MURDOCH advises the use of this drug. His claim for orthoform in gastric ulcer is simply this: Given a patient suffering from a sudden, severe pain in the epigastrium, and if the pain entirely disappears in twenty or thirty minutes after the administration of orthoform, we may be certain that the patient was suffering from gastralgia, the result of ulcer of the stomach; for orthoform will not relieve pain in the epigastrium when produced from any other cause whatever. In regard to the experience which others have had with orthoform in gastric ulcer, Hemmeter says: "There is another point of value in making a differential diagnosis. It has always been considered desirable to possess a substance which would relieve gastric pain if applied locally in patients afflicted with gastric ulcer. For this purpose I have administered orthoform. If orthoform is given in cholelithiasis the pain will not cease; but if given in a case of gastric ulcer it will cease promptly, especially if an alkali be combined with it."

The alkali, however, the author thinks, is superfluous. He has always given plain orthoform, and has never seen it fail to relieve gastralgia promptly, no matter how severe, if caused by chronic ulcer of the stomach.

THE TREATMENT OF PUERPERAL FEVER.

The *London Practitioner* for March, 1905, contains a paper upon puerperal sepsis by GALABIN which is of interest. He says that in cases of moderate pyrexia, where the temperature does not exceed 102° F., and where there is no reason to suspect any adhesion or partial retention of placenta or membranes, it may be sufficient in the first instance to wash out the uterus. The best tube for the purpose is Budin's tube, the transverse section of which is in the form of a horseshoe, so that there is a deep groove on the outside of the tube providing for the return current, and not liable to be blocked by a clot or shred. These tubes are made in glass, celluloid, or metal, of which the metal is the best, since it has the deepest groove in proportion to its size, and is most readily sterilized by boiling. For the uterine douche, it appears better not to use mercury, since poisonous effects have sometimes followed its absorption. Tincture of iodine one per cent, or lysol one per cent, in boiled water, answers the purpose. Although it is now generally considered preferable to use no vaginal douches during the puerperium in normal cases, yet when symptoms of sepsis have appeared they should be used and continued regularly, especially if any lacerations are present at the vulva. For the vagina perchloride of mercury may generally be used safely twice a day, provided the patient is in the dorsal position, and care is taken that no excess is left in

the canal. The strength may be 1 in 3000 for two or three days, later 1 in 4000. It should be avoided in cases of renal disease, or if there is any diarrhea, and if diarrhea or tenderness of gums appear under its use, it should be changed at once to one of the antiseptics mentioned above. These may be used at shorter intervals. There is ground for believing that mercury has a special efficacy as compared with other antiseptics, since the early triumphs of antiseptics in lying-in hospitals were obtained by the substitution of perchloride of mercury for Condy's fluid and carbolic acid, not only as a disinfectant for hands, but as a routine vaginal douche during the puerperium.

If the bowels have not been well evacuated when pyrexia first appears, it is well to give a dose of three or four grains of calomel, followed by sulphate of soda after a few hours. The pyrexia may be dispelled by the clearing out of a fecal accumulation, and these drugs have some influence as intestinal antiseptics. For the same reason there is some advantage in using sulphates, if laxatives are required later. If mercurial douches are being used, it is important to secure a daily action of the bowels.

Exploration of the uterine cavity should not be farther delayed if pyrexia is not abated after these measures in the course of twelve hours or so. It should be carried out at once, if the first onset of pyrexia is very severe, temperature rising to 103° or 104°, if there has been any adherent placenta, or if there is reason to suspect that a portion of the placenta or membranes has been left within the uterus. An anesthetic is given, and the uterine cavity explored with the index-finger completely to the summit. This exploration should not be omitted, even if it is considered certain that placenta and membranes have come away complete. For mistakes are sometimes made in this, and moreover there may be a septic clot adherent to the placental site, or sloughy fragments of decidua attached to the uterine wall, the result of the action of saprophytic microbes.

According to the experience of the author, this early exploration of the uterus is the measure for the treatment of puerperal fever which is most often omitted in private practice, or postponed until it is too late to be of service. It is not adequately replaced by repeated irrigations of the uterus, since this does not secure the evacuation of adherent shreds which may be furnishing a nidus for microbes. He suggests that it is in this respect that the ordinary treatment is most capable of improvement.

By some, especially by French and by some American authorities, not merely evacuation by the finger but curetting of the uterus has been extensively practiced. The object is not merely to break down adherent placenta, but to remove the whole of the endometrium in which microbes are spreading. It appears, however, a very remote chance that this can be successfully accomplished, especially when the microbes are streptococci, which spread deeply in the tissues. On the other hand, the traumatic effect is apt to be injurious, and the barrier of leucocytes which may have been established against the invading microbes is apt to be broken down, without removal of the whole of the infected tissue. The general opinion, therefore, is that curetting as a routine measure increases rather than diminishes the mortality.

THE GENERAL EFFECTS OF ANTIDIPHTHERITIC SERUM.

The *Birmingham Medical Review* for February, 1905, reminds us that it is important, now that the use of antidiphtheritic serum has become so general, to recognize some of its effects unconnected with diphtheria. For this purpose Coldefy gives the results of 400 cases in which serum was injected as a prophylactic measure, and in which there was no diphtheria at the time. In six of these cases there was pyrexia, which appeared and disappeared rapidly. In eight pyrexia lasted a short time. In a tubercular patient the fever lasted over several days, and was a troublesome feature in the case, so that the writer advises that antidiphtheritic serum should not be injected in cases of tuberculosis unless absolutely called for. Apart from such cases, the temperature phenomena following injection are, therefore, unimportant. Eruptions are one of the commonest results. In a few cases an eruption appears immediately; in others at a later date;

but all within a fortnight of the injection, most usually about the fourth or fifth day. It is exceptional for post-injection eruptions to appear after the fifteenth day. Eruptions sometimes disappear to return at the end of a few days. In several cases the patients happened to have pyrexia from some other cause. The injection of antidiphtheritic serum did not interfere with the fall of the temperature in these cases.

Albuminuria has given rise to considerable discussion. In the writer's series of 400 cases it was present fourteen times, slight in amount, and only lasted two or three days. It usually appeared during the first week. It is, therefore, of trivial occurrence. Should the patient, however, be suffering from nephritis (non-diphtheritic), it would seem better not to use serum as a prophylactic measure, reserving it for cases in which diphtheria is actually present. The quantity of urine is not affected to any appreciable extent. In four cases there seemed to be an increase in the amount.

Arthralgia occurs in three per cent of cases, and lasts three or four days. It sets in suddenly, and reaches its maximum on the second day. No bad effects result. It consists in violent pain in one or more joints, the knee being most usually affected, but the elbow, shoulder, and temporomaxillary articulations are also involved. The pain is not accompanied by either swelling or redness of the skin. It is usually limited to the joint, but may extend along the limb. In other cases myalgia is complained of. This is of even shorter duration than arthralgia. In cases both of arthralgia and myalgia there is usually some pyrexia, and possibly eruption. In some cases the pain is sufficiently severe to require the application of an anodyne. In several cases sore throat and glandular swelling appeared. They seemed to constitute one of the general phenomena resulting from the injection. The former bore no resemblance to diphtheria, and both symptoms lasted a very short time. Serum rarely gives rise to any disturbance of the alimentary system. The writer has, however, observed fetid diarrhea, and he quotes Moizard as having noted the same fact. In one case the diarrhea was accompanied by vomiting. Vulvitis was present in three cases, but the author does not feel justified in recognizing any connection between such cases and serum injection. It has been stated that syncope, cardiac arrhythmia, trismus, and convulsions may result from injection. There were no such phenomena in any of the writer's 400 cases. He therefore believes that when these have been noted in cases of diphtheria treated with serum they should be attributed to the former. It is stated that postdiphtheritic paralysis is met with more frequently since this method of treating diphtheria has come into vogue. The explanation is obvious. In former times a large number of children died; now that the greater number of those treated with serum are saved, they live to show diphtheritic paralysis, and serum treatment is the best for this condition. The writer has noticed that, while none of these effects is severe, they are most marked and last longest in patients of feeble constitution or suffering from some other disorder, and that even in such patients there is nothing to fear from the results of serum injection.

THE LIMITATIONS OF THE VALUE OF NITROGLYCERIN AS A THERAPEUTIC AGENT.

LOOMIS writes on this subject in the *Medical Record* of March 18, 1905. As a result of these clinical and laboratory observations he offers the following conclusions:

1. The usual dose of nitroglycerin (1-100 grain) is too small to produce any effect in pathological conditions; 1-50 grain is a minimum dose.

2. It is a perfectly safe drug to use. Even in the large and repeated doses used no ill effects have been noticed.

3. High arterial pressure in man is not perceptibly affected by it, nor is dilatation of the blood-vessels apparent.

4. Its effects are very transient, as shown by the experiments on dogs, and the ordinary dose of 1-100 grain every four hours could not possibly have any effect on the arteries.

5. Nitroglycerin is said to increase the quantity of urine in chronic Bright's disease, but after keeping accurate records of the daily amount of urine passed, the writer was never able to satisfy himself

that any increase seen was due to this drug.

6. He believes that in conditions due to arterial spasm so called, such as angina pectoris, migraine, and asthma, nitroglycerin may be of benefit, in full doses often repeated, but not in arterial sclerosis, where the arteries themselves are more or less changed.

Before closing he mentions a drug which in his experience has given most satisfactory results in relaxing the arteries and diminishing blood-pressure in arterial sclerosis. He refers to chloral hydrate, given in five-grain doses every four hours night and day. The effects are extraordinarily uniform. The sphygmomanometer will generally show a marked fall of pressure in twenty-four hours, and the distressing symptom of headache will generally be controlled. At the New York Hospital during his service, as well as that of his colleagues, Dr. Peabody and Dr. Lambert, nitroglycerin has been entirely discarded in arterial sclerosis, and chloral hydrate has taken its place.

THE MEDICAL TREATMENT OF GASTRIC ULCER.

HENRY writes on this subject in *American Medicine* of March 11, 1905. He advises that the patient be put to bed and kept there for ten days. On the first day the epigastrium is carefully washed with alcohol and sublimate solution; an ointment of boric acid spread upon a cloth is then applied to the same region, and over the cloth a hot flaxseed poultice about 20 centimeters long by 10 centimeters wide. The poultice is changed every fifteen minutes, and is kept applied for from ten to twelve hours during the day. At night a cold-water compress is substituted for the poultice, the cloth spread with ointment being interposed between the compress and the integument. The boric ointment dressing is changed but once in the twenty-four hours. An occasional effect of these continued hot applications is the formation of vesicles, which rarely suppurate, and invariably heal as soon as the dressings are discontinued. As a result of this topical treatment both the gastric pain and the epigastric tenderness disappear with remarkable regularity about the fifth day. In the exceptional cases in which the pain persists, the poultices are continued (during the day) for five days after it has ceased. From the above it is evident that, in the majority of cases, the poulticing is kept up for ten days. After the cessation of the poulticing a cold-water compress is applied at night for three weeks, while during the day the patient wears an abdominal bandage of flannel. After meals, during the convalescent period, rest in the recumbent posture for one or two hours is enforced, and the patient is strictly forbidden to make any exertion or to pursue any occupation, such as sewing or knitting, which involves the bending forward of the trunk.

There are certain contraindications to the employment of poultices, one of which is the recent occurrence of gastric hemorrhage. Leube's rule is not to apply poultices unless three months have elapsed since the last hemorrhage. In such cases the cold-water compress is substituted, and even this is withheld unless eight days have passed without hemorrhage. The term hemorrhage, be it remembered, is not synonymous with hematemesis. To determine the presence or absence of hemorrhage, the feces should be carefully inspected. When hemorrhage is present at the beginning of the treatment, or within eight days thereof, an ice bladder is first applied, to be replaced later by the cold-water compress. Another contraindication to the employment of poultices is the occurrence of menstruation.

From the beginning of the course of treatment the patient is placed upon the use of Carlsbad water, which should be swallowed in the morning before breakfast with pauses between each mouthful. The water should be neither too hot nor too cold (35° to 38° C.) and the average quantity thus taken should be about one-fourth of a liter. In cases of extreme acidity the amount may be increased to one-half liter. From ten to fifteen minutes should be occupied in swallowing the water. The use of Carlsbad water is continued for four weeks, and for quenching the thirst during the day a slightly alkaline water, such as the natural "Selterswasser," should be used. Drugs, as already stated, are not employed, as a rule, but when pain is severe, sodium bicarbonate, or bismuth, may be admin-

istered. Narcotics, such as opium and its preparations, including codeine, are never prescribed. In cases of obstinate constipation, enemata of tepid water may be employed daily, and every two or three days a dose of Carlsbad salt. After the eleventh day constipation may be relieved by a teaspoonful of a powder composed of powdered rhubarb 20 grammes, sodium sulphate 15 grammes, sodium bicarbonate 7.5 grammes.

The third important factor in the treatment is the diet. Nourishment is administered five times daily, and during the first ten days—*i.e.*, during the period of poulticing and rest in bed—is composed of boiled milk, Leube's meat solution, and softened, unsweetened zwieback. The following week there is added to the dietary, soups made of rice or sago, thoroughly softened by boiling in milk with white of egg, raw or soft-boiled eggs, calf's brain, and boiled chicken. Other tender meats are gradually added, and after the fifth week the diet of health is resumed, although, as a matter of course, more than ordinary care should be taken to avoid indigestible articles of food.

The number of cases in which Leube has carried out this treatment is 556, of which 63 were private patients and 493 hospital patients; 116 were men and 360 were women; the proportion of women to men being, therefore, about 2 to 1. The ordinary mortality of gastric ulcer is about 13 per cent, of which 6 to 7 per cent is due to perforation, and 3 to 5 per cent to hemorrhage. Out of Leube's 556 cases only 12 died, *i.e.* 2.2 per cent, of which 6 died of perforation and 6 from uncontrollable hemorrhage. In 69 of the cases the method was not carried out in all its rigor, the patients leaving the hospital before the cure was complete. This leaves 424 cases, of which 314 (74.1 per cent) were cured; 93 (21.9 per cent) were improved; 7 (1.6 per cent) were not relieved; and 10 (2.4 per cent) died.

It may be objected that in some of these cases the diagnosis of gastric ulcer was incorrect. With reference to this point Leube states that in 46 per cent of his cases there was gastric hemorrhage, and further, that in only one case was his diagnosis of gastric ulcer refuted by autopsy. The case in question was a hysterical woman who complained of great pain and tenderness in the epigastrium, and vomited blood. She died suddenly of pneumonia, and at the autopsy the mucous membrane of the stomach was found intact.

With such results as these, Leube's claim that in from 75 to 96 per cent of the cases of gastric ulcer surgery is uncalled for seems to be fully established. In 75 per cent surgery is meddlesome because this percentage is cured by a single course of the treatment above outlined. In the remaining 21 per cent, which represents the cases merely benefited by a single course of treatment, the method should be repeated once, twice, or even three times before considering the question of operation.

The author has employed Leube's method in modified form in a sufficient number of cases to convince him of its efficacy. His modification consists in nourishing the patient, during the first week of treatment, either entirely or partially by rectal enemata, and in the *pro re nata* employment of opium and its derivatives. He can see nothing but advantage in the judicious employment of opiates in gastric ulcer.

IODINE IN THE TREATMENT OF POST-OPERATIVE SEPSIS.

BURTENSHAW states in *American Medicine* of March 11, 1905, that the iodine treatment of sepsis during the puerperium was first proposed by Dr. T. J. Alloway in 1883. He advocated the introduction within the uterus of suppositories containing from .65 to 1.3 grammes (10 to 20 grains) of iodoform night and morning, "the idea being," as he said, "to replace the frequent and often unsatisfactory intra-uterine injection of antiseptic fluids." He reported three cases in which the patients were successfully treated by this method. In 1884 Dr. W. E. Boardman reported a successful case in which he had employed iodoform insufflation within the uterus. But to the late W. R. Pryor, of New York, belongs the credit of having placed this method of treatment on a scientific basis, which, in the opinion of the author, is unassailable from a deductive as well as from a resultant point of view, when our

present knowledge of the pus-producing organisms and their action is given due consideration. Pryor's last paper on the subject was published in the *New York Medical Journal* of January 23, 1904.

In patients in whom the constitutional symptoms are pronounced, or in whom it is suspected that the infection has passed beyond the uterus, he advocated thorough dilatation of the cervix, curetting of the uterus, irrigation with salt solution, and packing of the cavity with 10-per-cent iodoform gauze. He then opened Douglas's pouch and packed the pelvis with iodoform gauze of 5-per-cent strength. He removed the gauze from the uterus at the expiration of three days—usually it was unnecessary to renew it; that in the pelvis was permitted to remain in place a week, and was renewed at the end of that period. The iodine reaction usually was demonstrable in the urine of the patient in from three to five hours. Pryor reported thirty-seven cases in which this method of treatment was adopted. "Twenty-seven of the patients had not been operated on previously, and but one died; ten had been curetted before coming under observation, and three of these died."

The blood changes in septicemia are of extreme interest. While, as pointed out by many observers, the proportion of cases in which the pathogenic germs are demonstrable in the blood current is relatively small, there is no morbid condition known, with one exception, in which the destruction of the red cells is more constant. The average loss has been estimated by different observers as being from 200,000 to 1,000,000 a week in ordinary cases. Leucocytosis, as is well known, is not always present. Da Costa has pointed out that this is an extremely inconstant sign, as the blood in case after case of undoubted sepsis has been examined without finding any increase in the leucocytes above normal.

The pronounced affinity which the protoplasm of the leucocytes shows for iodine has been demonstrated many times. Goldberger and Weiss, in reporting the result of many microscopic examinations of normal and infected blood stained with a combination of iodine 1 part, potassium iodide 3 parts, and distilled water 100 parts, state that "in the case of normal blood the protoplasm of the leucocytes is stained a pale yellow and the nuclei remain almost colorless; in all purulent conditions, and especially in puerperal sepsis, the protoplasm is stained a slight or intense brown, or contains numerous intensely stained reddish-brown granules, the latter change being the more common."

In a great majority of cases of puerperal sepsis the infection spreads from the uterus through the medium of the lymphatics. Pryor concluded that "that method of treatment which secures sterilization of the original wound and accomplishes the absorption by the infected lymphatics of a potent yet harmless antiseptic, if at the same time accompanied by such treatment as will promote the eliminative functions, will succeed best." In postoperative sepsis having its origin in the abdominal cavity it is probable that the blood-vessels play as important a rôle as the lymphatics in the dissemination of the toxins. It has been abundantly proved that iodine and its congeners, under certain well-defined conditions, exert a marked bactericidal effect on pathogenic germs, although in what way the agent directly influences the toxic products of germ activity is not known. Pryor has shown that if the pelvis is packed with iodoform gauze in puerperal sepsis, the absorption of the iodine is rapid, the growth of the germs at the point of development is inhibited, and the course of the infection is greatly shortened. These points being given consideration, the question naturally arises: In postoperative sepsis of abdominal origin is it not rational to suppose that iodoform introduced into the abdominal cavity will exert the same beneficial influence? It is well known that a person suffering from septic infection will tolerate vastly larger doses of iodine in one or another form without showing evidences of iodism than under normal conditions, and therefore, under these circumstances, if such a procedure is adopted there need be little apprehension of poisoning.

The author's experience with iodine in these cases has been distinctly disappointing; yet he is convinced that further development of treatment along the lines indicated will, in the near future, yield brilliant results. During the past year the

author has had three cases of postoperative sepsis in his practice, two of which resulted fatally. The first case was probably due to the use of defective ligatures, but the patient finally recovered, a result which the author attributes more to the degree of infection and to her robust constitution than to the curative measures employed. The infection in one of the fatal cases was traceable to the unavoidable soiling of the peritoneum from the rupture during operation of an enormous pelvic abscess; in the other case the source of infection was undiscoverable. It was in this case that the iodine treatment was given its most extended trial, and with absolutely negative results.

CHLORIDE OF ETHYL AS A GENERAL ANESTHETIC.

In the *Intercolonial Medical Journal of Australasia* of January 20, 1905, DANIELL gives the results of his use of this drug. He says that in the first stage some patients do not breathe at first in a natural way, due frequently to nervousness, or to some mistaken idea as to how they should breathe. If given correctly, the sensations are not very much unlike those of nitrous oxide—a feeling of tingling through the body, and singing in the ears. Most patients told the writer that they had no unpleasant sensations, and as a rule the loss of consciousness is so sudden that they have no time to define their feelings.

The second stage begins with loss of consciousness; excitement, either mental or muscular, is as a rule absent. The respirations become quicker and deeper; the color improves; the pupil begins to dilate, but is active to light; the conjunctival and corneal reflexes are both present. The eyelids sometimes show slight twitchings, and the eyeballs rotate, and may present the condition of vertical nystagmus. Swallowing movements are not infrequent, and there is slightly increased secretion of saliva and mucus.

The third stage is that in which the patient is deeply enough under to permit of the surgical procedure. It is not always easy, at first, to know when the patient has reached this stage, and a little experience in various types of subjects is necessary to insure satisfactory anesthesia. It should also be remembered that, as in ether and chloroform, there are various degrees of depths of anesthesia, and it is by no means necessary to push the drug in some operations, although it may be so in others. Speaking generally, a patient may be considered to be under by the following symptoms:

The respirations become regular and automatic, and usually they are quicker and deeper than normal. All hesitating breathing has vanished. There may be stertor of varying degrees, from softly snoring, like deep chloroform narcosis, to a louder, as in some patients under ether. The full-blooded and plethoric subject and the obese are especially liable to noisy breathing; also those having enlarged tonsils, or any throat trouble, causing a narrowing of the upper air-passages; also heavy smokers with irritable and congested throats.

The eyeballs, which were during the second stage described as rotating, now become fixed in one position or another. They frequently turn downward or inward, and in some cases convergent squint is observed. It is not a bad plan to direct the patient to follow your finger with his eyes, without of course moving his head, your finger being slowly moved from side to side, about nine inches from the face. When the eyeballs become fixed, the eyelids generally close a moment after. It is as well to let him have a few more respirations after this before removing the mask.

Muscular relaxation is not altogether to be relied on, but it is a confirmatory sign. The arm will drop to the side if lifted up. If held out by the voluntary effort of the patient, it will be seen to gradually fall. Muscular rigidity may persist; this is generally found in strong, muscular men, alcoholics, heavy smokers, and generally those who take all anesthetics badly. But in the majority of cases, if the anesthetic is sufficiently pushed, muscular relaxation will follow.

The conjunctival reflex is the first to vanish, and is of some little use as a guide; the corneal reflex persists for a longer period, and in short cases may be permitted, especially in operations on parts not very sensitive. On the other hand, in operations on sensitive parts, it is as well to abolish this reflex; but it

should be remembered that it will persist in some cases although the patient is deeply under, and any attempt to abolish it would be putting the patient in danger of respiratory and consequent circulatory depression, due to an overdose.

Dilatation of the pupil, like the former, is not an infallible guide, but in the greater number of cases a dilated pupil attends this stage, especially in the early course of surgical anesthesia. In more prolonged administration the pupil comes down very much in size, even to normal. The pupil is very sensitive to peripheral stimuli, and is far larger in the anesthesia under consideration than any other, and to one used to the administration of chloroform alone it may be a little disconcerting.

The recovery, in the majority of cases, is without any unpleasant symptoms, and the patient is able to walk home and attend to his business.

DIFFUSE PERITONITIS—TREATMENT.

As the result of his experience, BLAKE (*New York and Philadelphia Medical Journal,* Nov. 19, 1904) has fixed upon the main points in the proper treatment of diffuse peritonitis. He has obtained the best results by early operation, rapidly performed, but not necessarily through a large incision; the least possible handling of the intestines (if they escape from the wound and cannot be returned they should be emptied through a small enterotomy incision); thorough lavage; and the omission of drainage. The principal features of the after-treatment are absolute rest for the alimentary canal and the exhibition of large quantities of fluids.

PYLORIC STENOSIS IN INFANTS.

SHAW and ELTING (*Albany Medical Annals,* January, 1905) say that pyloric stenosis in infants is not a rare condition and that its prognosis is grave. They report the case of a female child, eleven months old, which was cured by anterior gastroenterostomy after the method of Kocher. Their conclusions are as follows:

Pyloric stenosis in infants is of much more frequent occurrence than is commonly supposed.

Medical treatment of these cases has proved uncertain and unsatisfactory.

Surgical interference should be practiced before the strength and vitality of the patients have become seriously reduced.

Pyloroplasty and anterior gastroenterostomy are the operations of choice.

ACUTE INTESTINAL OBSTRUCTION—SURGICAL TREATMENT.

The first step in the surgical treatment of acute intestinal obstruction, according to BARKER (*Lancet,* September, 1904), is to see if the stomach has been emptied. The stomach-tube will often reveal the presence of a large quantity of matter even after vomiting. The stomach should be washed repeatedly before anesthetization.

The mouth and throat should be washed out with some antiseptic fluid, such as chlorate of potash, and a warm drink of brandy and water should be given if the stomach is empty. If the patient is very feeble, it is also sometimes of the greatest use to instil subcutaneously half a liter of a 5-per-cent solution of glucose or of normal saline. If glucose and normal saline are used together the first should be 2½ per cent and the salt .45 per cent. A rectal injection of warm saline solution and half an ounce of brandy is also desirable.

Further preparation includes all the precautions of asepsis. The less chemical germicides, however, used upon the skin once it has been cleansed the better. They should never be used within the abdomen.

Experience seems to show that local analgesia is better. For children and some nervous young people local analgesia is unsuitable, but this class of patients as a rule bear chloroform well. It is for the mature and particularly the aged that local analgesia is indicated.

When the abdomen is opened, search should be made first for a loop of empty bowel in the right iliac fossa, as a guide to the obstruction, which in the majority of cases is low down. This is the easiest way to find the point of stoppage.

The actual release of the obstructed bowel is a purely mechanical matter, but it appears easier to work from the empty bowel toward the distended portion. If

a band is found it is a simple matter to divide it. If an intussusception is present, it should be attacked from the distal end, and all pulling from the proximal should be avoided. These various procedures should be performed within the abdomen. Even in great distention it is better to draw forward a small portion of the most distended gut and slit it open over a basin, than to expose large tracts externally.

It must not be forgotten that the mere evacuation of gas and liquid feces revives the patient; in some cases the operation should go no further until the abdomen is emptied, but such cases are few.

Where several feet of bowel above the obstruction is distended, paralyzed, sodden, and discolored, it is better to make an extensive resection of the gut with its contents, followed by an enteroenterostomy, since shock is not proportionate to the length of gut removed. In one case, that of an old woman of seventy-eight, five and a half feet of gut was removed, and recovery was perfect under one dressing. The patient remained well four years after operation. The other case was that of a woman of fifty-two, with six and a half feet cut away. If a bowel be distended to only two inches in diameter every foot of it will contain more than a pint of putrid fluid.

Of course, if the case is a recent one where the bowel is not seriously damaged by the retained feces, and is manifestly sound at and above the seat of obstruction, evacuation without resection applies.

The method of drainage is an open question. Barker is in favor of closing the abdomen at once unless there be general peritonitis.

The after-treatment is of some importance. The patients should sit up in bed from the first as much as possible. They should lie down only on the side for sleep, to overcome the tendency to hypostatic pneumonia. They should begin at once to take a mixture of 10 grains of carbonate of bismuth three times daily, probably the best intestinal antiseptic. Albumen water, with one drachm of brandy, should be given from the first by the mouth in small quantities, and nutrient enemata and instillation under the skin of normal saline solution or five-per-cent solution of glucose is recommended as a routine. Half a liter morning and evening may be given if necessary. Food may be given in small quantity early in cases where the bowel has been resected.

In many cases diarrhea is a very troublesome complication. It is not well to check this too much, but the bismuth plays a useful part in cleansing the gut and so arresting the complication.

In some cases, especially intussusception, the temperature rises to a high degree after liberation of the gut. Cold sponging and warm drinks have proved the best treatment for this. If the fever happens to be from pulmonary emboli or phlebitis, the best that can be done is to sustain the general strength with the usual stimulants.

SOME CATARRHS OF THE MIDDLE EAR TREATED WITH COMPRESSED AIR AND NEBULIZER.

It is deemed of great importance by BRONNER (*Lancet*, Nov. 5, 1904), in cases of middle-ear disease, to treat locally not only the mucous membrance of the middle ear, but also that of the tube and nasopharynx.

In this treatment he employs Lucae's double bag fixed on the end of a catheter, but he recommends the American compressed air apparatus in conjunction with a nebulizer. Practically any drug can thus be sprayed on to the mucous membrane of the Eustachian tube and middle ear, for any length of time, and under any pressure. Any solution can be used; if watery, then glycerin should be added. The most useful solvent is a hydrocarbon oil, such as chrismaline or paroleine.

When the drum is perforated, the liquid, looking very much like vapor, may be seen escaping by the external meatus. It also, of course, enters into the cavities and recesses adjoining the middle ear, and thus in cases of purulent otitis media it can be used to disinfect these regions, which are so inaccessible to ordinary treatment. When the air is manipulated to give up to 1000 vibrations a minute, this is found useful in breaking down slight adhesions of the drum, removing spasm of the tensor tympani muscle, and, among other things, dispersing any serum in the middle ear. The immediate result surpasses that obtained with the Politzer bag, and is more permanent. In some

cases the catheter is used several times at intervals of a quarter to half an hour, and often the hearing improves slightly after each application.

Many cases of so-called dry catarrh of the middle ear are not due to any affection of the mucous membrane at all, but to a primary disease of the osseous labyrinth. In such cases, naturally, the use of the catheter can do a great deal of harm. If sudden great pressure is applied, as with Politzer's bag or the bag attached to the catheter, the hearing and tinnitus may become worse. In doubtful cases the catheter is used with an iodine spray under very low pressure.

The compressed air can also be used in an ordinary coarse spray for numerous purposes—to apply a cocaine solution to the nares before the use of the catheter, or an astringent to the mucous membrane of the nares and nasopharynx, or a disinfectant (perchloride of mercury, peroxide of hydrogen, etc.) to the nares before and after any intranasal operation, or for the local treatment of laryngitis, tracheitis, etc.

Milligan advocates heating the air in the compressed form.

Donnellan has found that a previous application of cocaine with adrenalin often allows successful use of the bag where previously it had no effect.

RESULTS OF TREATMENT OF PERFORATED ULCER OF THE STOMACH.

BONHEIM (*Deut. Zeit. f. Chir.*, lxxv, 389) believes that statistics from one hospital are more reliable than those collected from the literature, and therefore publishes his own statistics of 16 cases in the last five years. The death-rate has steadily decreased, and although of the first 11 cases 7 died, the last 5 have recovered. He relieves the anemia due to dilatation of the abdominal vessels (vasomotor splanchnic paralysis) by intravenous injection of Ringer's solution (sodium chloride 8.0, potassium chloride 0.2, sodium carbonate 0.1, water 1000). In one case he injected 17 quarts in four days. Operation should be performed at once. After the discharge has been wiped away the peritoneal cavity should be washed out with normal salt solution. The perforation should be sought for, and if found should be sutured in layers if stitches will hold; if not, a piece of omentum may be sewed into the opening. The ulcer should be excised. A gauze drain should be left extending to the place of perforation. The perforation is generally located on the anterior wall, near the lesser curvature and near the pylorus. There are generally other ulcers present.

RENAL CALCULUS—INDICATION OF PRESENCE BY X-RAYS AND A NEW METHOD.

It is the belief of LUCAS (*British Medical Journal*, Oct. 1, 1904) that the *x*-rays as a means of diagnosis in renal calculus are greatly overlauded. He gives at least two instances in his own experience wherein they failed. In the first instance the stoutness of the patient and the consequent great depth of the kidney from the surface and the small size of the stone accounted for the failure. The second patient was a thin male, however, but here the stone was a large branching phosphatic stone immersed in pus. From other experience it would seem that the pus within and the adhesions outside the kidney may have been the cause of this failure.

In this latter case also a test, termed by him the flexion and stamping test, gave negative results on its application by the deviser thereof, the author. It was successful in the first case.

This test should be found of service in doubtful cases. During extreme flexion of the thigh upon the abdomen some pressure is brought to bear upon the kidney, especially if the kidney is pressed down by the diaphragm in deep inspiration; the psoas muscle tends at the same time to displace the kidney forward and outward. When the knee is suddenly released, and the patient told to bring the heel down forcibly on the ground, the kidney loses its muscular support, and is taken at a disadvantage, so that it is exposed to a sudden shaking. This will often displace a movable stone from a calyx, and bring it into the sensitive lower part of the renal pelvis, and so start an attack of colic. Hemorrhage may also follow its employment as a test. The test succeeds relatively to the amount of movement imparted to the stone in the kidney, and to its impinging

on a more sensitive part than that on which it had been previously lying. It should be remembered that an unduly movable kidney may be shaken out of its bed by this test, and pain and colic may be induced in this way; but a movable kidney is to be detected by manual examination, and this fallacy can so be excluded.

EXPERIMENTAL EFFECTS OF CHLOROFORM ON THE KIDNEYS.

OFFERGELD (*Arch. f. klin. Chir.*, lxxv, 758) reports a series of experiments on rabbits in which the effect of chloroform upon normal kidneys and upon these organs after injury was determined. Narcosis prolonged for two hours always proved fatal either directly or after a few days. Autopsy showed marked fatty degeneration in the kidneys, liver, and heart. A series of experiments in which rabbits were killed at various intervals after a few minutes' narcosis showed that the fatty changes in these organs disappeared in about eight days. Pregnancy *per se* had no effect on these changes, but the hearts of the fetuses showed fatty change. If the renal artery on one side was tied, this organ showed no degeneration. If both veins or ureters were ligated, or any of the renal poisons given before narcosis, the effect was much increased.

If chloroform was given for a few minutes one day and after a few days again administered, the second narcosis always proved fatal. Chemical examination showed that the fat content of the liver was increased and that of all other parts lessened after narcosis. Offergeld believes that the injury to the kidney causes a nephrolysis, which itself causes death after several days.

EXSTROPHY OF THE BLADDER—URETER IMPLANTATION BY MAYDL METHOD.

THOMPSON (*Texas Medical News*, October, 1904) has treated three cases of exstrophy of the bladder, one by the operation of Maydl, preceding the account of which he takes occasion to review the literature concerning the implantation of the ureters in the rectum. The later statistics on this operation give a mortality of 18 per cent, though Maydl only seven years after the first operation had in that time performed twenty operations with only three deaths, or a mortality of 13 per cent. This latter, in view of the difficulties encountered and the delicate nature of the procedures, Thompson considers to be little short of remarkable.

The case reported is that of a white child three years of age, suffering from complete extroversion with more or less pronounced protrusion of the posterior bladder wall. There was no sign of the navel. The recti muscles and pubic bones were wide apart. There was irregularity in the position of the orifices of the ureters, and that on the left side was so narrow that it admitted the urethral catheter with some difficulty. Urine was collected from each ureter and was found normal in every particular. Maydl's operation being decided upon, it was deemed advisable to perform it in two stages.

At the first operation the ureters were dissected out of their beds for about an inch and a half, and the ends sutured to the margin of the hymen.

The second operation was performed about two weeks after. The ureters were separated from one another and catheterized, the catheters being fastened in by temporary ligatures. The peritoneal cavity was opened in the median line and the sigmoid flexure brought out through the abdominal wound. Two quadrilateral flaps consisting of the serous and muscular coats were reflected from the convex surface of the sigmoid flexure. The hinges of the flaps were on the lateral aspects of the gut, and the meeting point was the middle of the anterior muscular band. A small opening was made in the mucous membrane at the lower end of the denuded area. The catheters were withdrawn from the ureters and a stitch placed through the contiguous sides and knotted to hold them in contact, care being taken not to enter the lumen. A silk thread armed with a needle at each end was passed through a portion of the wall of each ureter, avoiding the lumen. Then each needle was passed through the opening in the mucous membrane of the gut and made to penetrate the intestinal wall from within outward, a little distance apart, emerging on the peritoneal coat of the bowel about one inch below the opening. Both ends of the thread were dragged on, and the ure-

ters pulled through the opening until the ends lay in contact with the bowel at the point of the penetrating threads. Then with fine silk the edge of the opening in the gut was united to the sides of the ureters. For this purpose very fine curved cleft-palate needles (Lane's pattern) were used. The muscular flaps were then sutured together carefully over the ureters; care being taken to apply the upper border of the flaps around the entering ureters. Lastly a piece of omentum was carefully sutured over the whole wound area. The controlling loop of silk was then withdrawn through the gut wall.

The operation was tedious, taking about one hour and a half. Shock was profound, and for forty-eight hours it hardly seemed possible for the child to recover. No evacuations from the rectum were seen until the day after the operation (almost twenty-four hours), when, in response to an enema, a copious discharge with a urinous odor was obtained. This gave the test for the urea. From this time urine was passed constantly, and although the child was much collapsed and extremely weak for five or six days she showed no further bad symptoms.

The patient was brought for inspection a year later. The physical condition was excellent. There was a slight degree of ulceration around the edges of the original bladder boundary. The cicatrix, which had been grafted by Thiersch's method, still protruded on exertion and had to be supported by an abdominal binder.

Under ordinary conditions the child could retain the urine in the rectum for four hours during the day and nine hours when asleep at night.

EFFECTS OF RADIUM ON CANCER.

EXNER (*Deut. Zeit. f. Chir.*, lxxv, p. 379) states that radium affects the tissues to the depth of half an inch only, and that, therefore, large tumors must be removed and the ulcerating surface treated. The changes after exposure to radium are similar to those after *x*-rays, consisting mainly in increase of fibrous connective tissue and fatty degeneration of blood-vessel walls. Scholtz has reported two cases of cancer of the skin treated by radium which show no recurrence after nine months.

TREATMENT OF SCAPULUM ALATUM.

DUVAL (*Revue de Chirurgie*, xxv, p. 41) after discussing the operations proposed for this condition describes his own method, which consists in removing a large part of the subscapularis muscle from near the dorsal border of the scapula, stripping the periosteum from the denuded portion and from the corresponding part of the sixth and seventh ribs, and fastening the scapula to these ribs by silver wires passed around the rib and edge of the scapula and through a hole in this bone near the edge. A portion of the erector spinæ muscle is then freed from its lower attachments and sewed to the periosteum of the scapula. Of three cases treated in this way one was completely successful; in the others the stitches tore through the scapular margin.

GUNSHOT WOUNDS IN TIME OF PEACE.

KRONER (*Archiv f. klin. Chir.*, vol. lxxv, p. 643) publishes a very interesting account of the gunshot wounds which have been treated in his clinic in the last ten years. He takes up the cases according to the part injured, beginning with the head, which was the part involved in more than half the cases. He insists that such wounds are to be looked upon as aseptic, and that no cleansing or washing out of the deeper parts should be made without definite indication. The ball may safely be left *in situ*. After cleansing of margins the wound should be dressed with sterile or iodoform gauze, or, if very small, sealed with collodion. It should never be probed, nor should the ball be sought by anything except the *x*-ray.

It is necessary to trephine only in case the ball has injured one of the larger vessels in the brain and there is continuance of hemorrhage, as shown by increase of pressure symptoms. Otherwise the skull should not be exposed even if fracture is recognized. Injuries of the face are only important on account of the deformity they may produce.

Wounds in the neighborhood of the heart are next in frequency, although the ball generally passed well to the left of that organ. If the heart itself is injured, the wound proves rapidly fatal. If the pericardium only is injured there is apt to be hemopericardium, but the treatment is

passive unless the heart is pressed upon, in which case resection of a rib should be performed to allow of complete emptying. The trocar is to be avoided. If the lung is injured there is generally hemoptysis or hemopericardium. The treatment is passive unless an intercostal artery has been severed or the exudate is not promptly absorbed or becomes purulent, in many of which cases resection of rib must be performed.

In abdominal wounds laparotomy should not be performed unless injury of internal organs is shown by increasing distention. Incision is best made in the middle line, and all organs must be carefully examined after washing out the abdomen with normal salt solution. Wounds should be sutured, and if the water used in flushing returns clear no drainage is required. Wounds of the limbs heal promptly unless hemorrhage or phlegmon occurs. Tetanus is the usual cause of death in fatal cases.

HYPERTROPHICA—TREATMENT BY GALVANOCAUTERY.

BLOEBAUM (*Münchener medicinische Wochenschrift,* No. 52, 1904) treats cases of advanced acne rosacea of the nose as follows:

If there are only a few large veins visible at the root of the nose, he merely pierces each of these with a galvanocautery needle, but if there are many he punctures the entire skin of the nose with points so close together that no vessel can be missed, to a depth of ½ to 1½ millimeters. The entire skin soon sloughs off and the resulting raw surface is trimmed into shape as necessary by the cautery. and dressed with an antiseptic powder (bismuth, dermatol). The skin heals in about twelve days. This method has given better results than operations with the knife or electrolysis.

FLOATING KIDNEY—NEW METHOD OF TREATMENT.

SCHMITZ describes in the *Wiener klinische Wochenschrift,* No. 47, 1904, a new method for treating floating kidney.

After reposition of the kidney, the patient is put in a standing position. Then an adhesive strip, 5 to 8 centimeters wide, and of ample length, is applied tightly to the abdomen, beginning in the groin of the sound side, crossing to the opposite groin, then upward around the crest of the ilium to the back.

This exerts an inward and upward pressure upon the abdominal viscera. The influence extends to the kidney, and keeps it in place until a sufficient deposition of perirenal tissue occurs to make artificial support unnecessary. Increase of body weight, appetite, and digestive power is noted, and it gives to the patient a sense of support for which he is grateful.

PREPARATION OF CATGUT.

MIYAKE describes in the *Centralblatt für Chirurgie,* No. 45, 1904, a method of preparing catgut which has some interesting features.

The catgut is stretched tightly over a glass plate tanned in five-per-cent watery extract of quebracho, washed for a short time in water, subjected to the action of a four-per-cent formalin solution for twenty-four to forty-eight hours, washed in running water for twenty-four hours, boiled in water for ten to fifteen minutes, and stored in a mixture of absolute alcohol with 5-per-cent glycerin and four-per-cent carbolic acid.

In experiments on dogs this suture material in aseptic wounds remained intact for sixty-five days, and was absorbed after eighty-three days. In infected wounds it was absorbed after thirty-two days.

CANCER OF THE TONGUE—TREATMENT.

FAURE (*Presse Médicale,* p. 801, 1904) believes in early and radical operation in a case of cancer of the tongue. With regard to technique, he does not consider preliminary tracheotomy necessary, but thinks the instruments should be at hand to perform it instantly if demanded. If the disease seems purely unilateral, it is not necessary to remove the cervical lymph glands on the opposite side. The maxilla should be spared if possible. If the conditions are favorable operation *en bloc* is the choice, but if the state of the patient is not good this method has a much higher mortality. If the cancer is limited to the tongue, this should be first

removed without injuring the floor of the mouth, and after twelve to fifteen days the neck is opened from in front, and the cervical glands removed. The danger of this method is much less. "It is better to save the patient by two operations than to kill him under the pretext of sparing one." Rarely it will be possible to do this double operation at one time.

SCIATICA—INJECTION TREATMENT.

LANGE (*Münchener medicinische Wochenschrift,* No. 52, 1904) after trying, but without success, various medical and surgical measures for the relief of sciatica, finally obtained complete relief in five cases. He employed a solution of eucaine B. in .8 per cent salt solution, injecting it under the skin near the sciatic notch, until a large wheal formed. The needle is then pushed down, until a jerking of the leg showed that the nerve had been touched. Then 70 to 100 cubic centimeters was rapidly injected. Mild local pain lasted for two or three days. In three of his cases a second injection was required for complete cure. Functional and permanent relief was almost instantaneous in all cases.

ABSCESS FOLLOWING TYPHOID FEVER.

HARBOLT in the *Centralblatt für Chirurgie,* No. 44, 1904, reports a case of typhoid fever, occurring in 1881, which was followed by the development of abscesses at varying intervals until 1903. The abscesses showed the presence of typhoid bacilli, and the blood gave a positive and most intense Widal reaction.

PROSTATIC OBSTRUCTION—OPERATION.

With a loss, so far, of only two patients out of thirty-four operated upon, SYMS (*Journal of the American Medical Association,* Nov. 5, 1904) justly considers his method of operation worth detailing.

The patient, anesthetized with chloroform or ether, or with spinal cocainization, is placed on a short inclined plane, so as to be in a very extreme lithotomy position. A Syms staff is introduced in the bladder, and a single incision is made, opening the perineum down to the membranous urethra. The knife is passed into the groove of the staff, and the membranous urethra opened throughout its length. A probe or curved director is passed to the groove of the sound and thence into the bladder as a guide. Then the staff is removed, and the index-finger is pushed into and through the prostatic urethra, fully dilating it, into the neck of the bladder. The bladder is then thoroughly irrigated with sterile water, the Syms rubber retractor is introduced into the bladder and fully dilated and clamped. Sufficient traction is now made on it, the wound is dilated with the finger, the tissues being pushed posteriorly and to one side so that the sheath of the prostate is exposed, and a free vertical opening is made with scissors. The prostate is then rapidly enucleated by the index-finger. If the proper line of cleavage be found, this may be rapidly and almost bloodlessly accomplished. As soon as the prostate is removed, a large perineal drainage-tube is introduced into the bladder through the prostatic urethra, and the wound and the space from which the prostate was removed are packed with iodoform gauze. This packing is made tight and firm in proportion to the amount of oozing encountered. The wound is temporarily sutured over the gauze, and the operation is complete. Patients are usually in bed within half an hour from the time the operation is commenced.

Concerning preservation of the ejaculatory ducts, certain prostates produce their obstruction entirely on account of anatomic changes which take place in the isthmus or so-called middle lobe. In the majority of cases the obstruction is due to the lateral lobes, which distort or compress the bladder orifice. In certain cases it would be impossible to remove the obstruction without removing the portion of prostate which contains the ejaculatory ducts, but in no case is it necessary to remove any material portion from this region. As to the ultimate preservation of these ducts, and as to the ultimate preservation of the sexual function, we would say that this whole question must be more or less problematic. In a number of cases epididymitis has ensued as a postoperative complication, usually occurring when healing was nearly complete, sometimes occurring after complete healing. This

would certainly show that infection had taken place from the urethra through the natural channels to the epididymis, and therefore that these ducts must have remained patent. In elderly patients, and, in fact, in the majority of prostatics, it would be difficult to arrive at a satisfactory conclusion regarding the preservation of the sexual function.

Most of the recent patients have been up and about at the end of forty-eight hours, the gauze packing having been removed twelve to twenty-four hours after the operation, and the drainage-tube usually at the end of forty-eight hours. From then on the patient is better out of bed than in. The normal bladder function has been speedily reproduced in all of these later cases.

SUPRACONDYLOID AMPUTATION AT THE KNEE—MODIFICATION.

In the *Centralblatt für Chirurgie,* No. 45, 1904, SILBERMARK describes a modification of the Grittis supracondyloid amputation at the knee.

The incision is made about two finger-breadths below the lower border of the patella, and the patella ligament is then divided near to its insertion at the tibial tubercle. The ordinary supracondyloid amputation is carried out, the sawn surfaces of the patella and femur brought into contact, and then by means of two strong catgut sutures the stump of the ligamentum patella is fastened to the central stump of the biceps femoris and semitendinosus muscles.

This modification provides greater security of contact for the patella and femur.

FEMORAL HERNIA—NEW OPERATION.

A new radical operation for femoral hernia is described in the *Centralblatt für Chirurgie,* No. 44, 1904, by HAMMESFAHR.

After the hernial sac is freed and reduced, he lays bare the crest of the horizontal portion of the pubes, near the crural canal, incises and reflects back the periosteum for four to five millimeters on either side of the crest, and through this bared portion of the bone from below upward bores three holes, one in the region of but not too near the vein, another toward the median line, and the third midway between these two. Through these holes are passed strong silk sutures armed on the upper ends with needles. By means of these Poupart's ligament is tightly sutured to the pubic crest. This procedure effectually closes the crural canal.

PUERPERAL SEPTICEMIA, WITH SPECIAL REFERENCE TO THE VALUE OF ANTISTREPTOCOCCIC SERUM.

After discussing the nature, bacteriology, and symptoms of puerperal septicemia, RAW (*Liverpool Medico-Chirurgical Journal,* January, 1905) dwells on the value of antistreptococcic serum in this condition. Twenty-seven of his 61 cases showed the streptococcus pyogenes, and it is only when this organism is present that the serum is of value. Its therapeutic effect is marvelous, the temperature falls, the patient perspires and often goes to sleep, while the pulse-rate is much decreased. He offers the following conclusions as the result of seven years' observations:

Streptococci must be demonstrated by the microscope, and confirmed, if possible, by cultures, before the serum is used.

The serum must be used in an early stage of the disease if its full benefit is attained.

The doses should be large and repeated often.

NON-SUPPURATIVE DISEASES OF THE MIDDLE EAR—TREATMENT.

At the seventy-second annual meeting of the British Medical Association (*British Medical Journal,* Nov. 5, 1904) PRITCHARD opened a discussion upon the treatment of non-suppurative disease of the middle ear.

In the course of his observation he classifies this affection as follows: (1) Acute non-suppurative otitis media. (2) Early stages of chronic non-suppurative catarrh. (3) Advanced stages of the same. (4) Middle-ear adhesions the result of former acute inflammation. (5) Sclerosis resulting from disease of the bony capsule enclosing the internal ear, and forming the inner wall of the tympanic cavity, which is not considered catarrh at all.

As to the treatment of the first, it is advised that mothers be taught to put mus-

tard leaf behind the ear instead of a septic onion into the external meatus; thus fewer cases would run on to suppuration.

In the earliest stages gentle politzerization (not catheterization) will often relieve the pain at once, and tend to cut short the attack. Counter-irritation behind the ear is always most valuable, and will often arrest the otitis and relieve the pain. Instillations are only occasionally advisable. When they are used, they should be strong anodyne solutions—for example, cocaine or morphine—in an antiseptic medium.

Heat in the form of very hot fomentations or hot bran bags is very useful. Leeches in front of the ear and below it are valuable in very acute cases.

Incision of the membrane is called for when there is marked bulging of the membrane. The meatus must be purified, and afterward dressed antiseptically to avoid suppuration.

Purgatives are nearly always necessary. Phenacetine or antipyrin may be given to relieve the pain. Pharyngeal treatment is usually required, but nasal douches or irrigations must be avoided,

The after-treatment should include politzerization. This will restore the hearing and prevent adhesions. If adenoids are present they must be removed.

As to the treatment of the early stages of chronic non-suppurative catarrh, in which there is exudation into the mucous membrane and from its surface, hence stenosis of the Eustachian tube and more or less fluid in the tympanic cavity, politzerization is preferable to catheterization. This should be repeated at intervals of one, two, or three days, according to the relief obtained as ascertained by the amount of improvement to hearing. It must not be continued when it increases the deafness.

Incision of the membrana tympani may be practiced if there is much fluid in the tympanic cavity, but this is practically a rare condition. The operation should, of course, be performed antiseptically.

Local medicinal treatment is most valuable. Sterile alkaline nasal irrigation—*e.g.*, borax and sodium bicarbonate—is to be preferred to the nasal douche, as the latter will occasionally produce acute otitis. Mild astringent sprays are often beneficial. Inhalations of pine oil eucalyptus oil, or still better, of fumes of ammonium chloride, are also valuable.

Adenoids and also enlarged tonsils, if present, must be operated on; and any nasal stenosis must also be removed to allow of free nose breathing.

Climatic treatment is important. Damp situations, such as river valleys of gravel with clay subsoil, should be avoided, and high, dry, and sunny positions should be sought. Warm and well drained seaside resorts are good, whereas cold, damp seashores with northern aspects must be avoided. High sunny alpine valleys are often very beneficial; but on rapidly descending from these Valsalva's inflation should be practiced. Early and continued treatment of these stages of catarrh is most important, and will often prevent the advanced stages.

The treatment of advanced chronic middle-ear catarrh is much less satisfactory on account of the adhesions causing retraction of the membranes and fixation of the ossicles.

Catheterization is often preferable to politzerization, but the value of courses of repeated inflations has been much overrated. Patients must be warned against the constant recourse to Valsalva's method of inflation; but, cautiously employed, it is of value. Gentle suction by means of Delstanche's masseur is occasionally of value, but may be easily overdone. The Eustachian bougie has been overrated.

All operations in this division have proved futile.

As to local medical treatment, nasal irrigations of sterile alkaline and saline solutions are of much value. Inhalations of the ammonium chloride fumes, with cautious Valsalva's inflation to introduce them through the Eustachian tubes, form a most valuable treatment, but long-continued use with intervals of rest is necessary. Injections through the Eustachian catheter are much employed by some surgeons, and are occasionally of value. Probably a sterile solution of sodium bicarbonate is the most efficacious.

Occasionally, when the mucous membrane is glazed and dry, small doses of potassium iodide with ammonia, so as to produce slight symptoms of coryza, combined with some form of inflation, will yield excellent results. Turkish baths

are of value in some of the less advanced cases.

Operative interference in middle-ear adhesions of old standing has as yet signally failed.

Sclerosis appears to be hopeless no matter what the treatment. The best that can be done is to keep up the general health.

Though in the advanced stages of chronic catarrh the aural surgeon can do little to cure the complaint, he should not forget that he can do much for the general comfort of the patient, and often even a very little is a great gain in this matter to a deaf patient.

Bronner, discussing the same subject, did not agree with Pritchard regarding the use of the catheter. He considered it infinitely superior to politzerization. It should not be used with a Politzer bag, in which there is risk of damage to the drum membrane—it should be used with gentle air pressure, which can be regulated. Patients should not be allowed to use the bag themselves, nor Valsalva's method.

Natier (Paris) exhibited a system of tuning-forks which he employs in treatment, on the basis that deafness is a deficiency in the normal hearing power.

Downie confined his remarks to cases of old-standing sclerosis. Lubricants applied to the tympanum often help in the movement of thick sclerosed membranes combined with Valsalva's method of inflation. This latter should always be done gently and quickly and not frequently. The high-frequency current had not been beneficial in his experience.

Pegler, who had opportunities of watching cases of effusion into the tympanic cavity where he was in doubt as to the benefit of puncture, had found that if the fluid were left alone it became absorbed, and if the hearing were carefully tested afterward there was little alteration in the deafness compared with that before, and the patients were thus saved the slight risk of operative interference.

Spicer pointed out that what are termed colds in the head should be attended to, to discover whether they may not be signs of an inadequacy in the size of the nasal channels to admit the air required by the organism without undue force and speed during the act of inspiration.

Waggett found four grains of carbolic acid to one ounce of glycerin a very valuable anodyne in myringitis.

Shaw notes that for relief of pain there is nothing better than 10-per-cent solution of carbolic acid and cocaine in water. As he believes it impossible to tell beforehand in what cases injections into the tympanum are beneficial, he informs the patients of this, and then tries the effects for six weeks, once a week. He uses parolein with menthol or thymol. If there is no improvement he does not persist with the treatment at the end of six weeks.

Hill tries in sclerosis the effect of Delstanche's masseur. This often relieves the tinnitus, and occasionally improves the hearing for conversation.

TWO CASES OF EXCISION OF GASSERIAN GANGLION FOR NEURALGIA—OPERATIONS 1896—NO RECURRENCE.

HARRISSON (*Liverpool Medico-Chirurgical Journal,* January, 1905) details two cases which are of special interest because of the long postoperative immunity from pain.

The first case was that of a laborer, forty-five years of age, who had suffered from right-sided neuralgia in the distribution of the fifth nerve for five years. After two operations upon the course of the nerve, which failed to afford permanent relief, the Gasserian ganglion was removed. The second case, forty years old, had been suffering three years. The primary operation was excision of the Gasserian ganglion.

In neither case has there been any recurrence, although it is eight years since operation. The author prefers the temporal to the pterygoid route.

INOPERABLE CANCER—TREATMENT BY HYPODERMIC INJECTION.

Encouraged by the results of hypodermic medication in various complaints, SHAW-MACKENZIE (*Medical Press and Circular,* Oct. 19, 1904) decided to give it a trial for inoperable cancer.

For years Webb, of Melbourne, has been successfully treating cases of inoperable cancer by hypodermic injections of soap solution. Unaware of the exact dos-

age, however, Shaw-Mackenzie began the injections with 5 minims of a one-per-cent solution, increasing by 5 minims on alternate days to full dose of 60 minims every fourth day. Amelioration was obtained in all the cases, chiefly in the direction of decrease of tumor, diminution of fetor and discharge, and cessation of pain. The injections are given into the subcutaneous tissues, chiefly into the outer surface of the upper part of either arm alternately, or of the chest in the neighborhood of the growth. They are not altogether free from some smarting or pain, which, however, soon passes off, or is obviated by previous injection of eucaine. The soap solution readily passes through an ordinary fine steel needle, and the same details of antisepsis and local anesthesia before insertion of the needle are followed as in the case of the Chian turpentine injections.

TORSION OF THE SPERMATIC CORD.

FIRTH (*Bristol Medico-Chirurgical Journal,* December, 1904) reports in detail a case of torsion of the cord, and gives a résumé of the history of the disease together with the treatment. Between 40 and 50 cases have thus far been reported. The methods of treatment available are as follows:

1. Detorsion by taxis.
2. Detorsion through an incision.
3. Detorsion, with fixation of the testis in the scrotum (orchidopexy), including transplantation if the testis is imperfectly descended.
4. Castration, immediate or secondary.

Detorsion without fixation of the testicle is not ideal treatment, for it leaves the patient liable to a recurrence of the trouble. Detorsion with fixation of the testicle in the scrotum in such a way that recurrence will be rendered impossible is the method of choice, if it can be satisfactorily carried out. Immediate castration is required, first, if the testicle has become infected and is gangrenous; and secondly, if detorsion and orchidopexy are found impracticable or have been tried and have failed. If a non-infected hemorrhagic testicle is left after detorsion and the wound remains aseptic, a portion of the gland at least may survive to be of use in the economy. If, however, the wound becomes septic, gangrene of the testicle will almost certainly follow, and secondary castration will become necessary.

DIFFICULTIES OF ANESTHETIZATION AND THEIR CORRECTION.

PEDERSEN (*Medical News,* Dec. 31, 1904) advises the use of the mouth-gag and tongue forceps to keep the pharynx open. Restraint during the period of excitement should be very gentle, as otherwise the violence of the patient will be increased. Cough is treated by removal of the anesthetic until the attack ceases, after which it is cautiously pushed. Stertor during etherization, due to valve-action between the soft palate, pharynx, and tongue, or to mucus in the throat, can be avoided largely if the mouth is held open and the tongue kept forward. Retching and vomiting can be controlled by rapid and steady deepening of the narcosis. The patient should be kept in Rose's position. The failure of respiration is the chief danger. A set of tracheotomy instruments should always be at hand. In case of nephritis the chest should be elevated by a sand-bag under the shoulders. Operations on the thorax and abdomen may cause reflex arrest of respiration, and if this occurs the operation should be suspended. Impending circulatory failure may be discovered early by testing the capillary efficiency. This is done best by squeezing the blood out of the end of the finger or out from under the finger-nail and observing the time required for its return. If it returns slowly, stimulation should be given at once.

The author thinks that proper care during the first twelve hours after administration is equally as important as the administration itself. The average patient should be able to talk coherently thirteen minutes after the anesthetic has been discontinued. It is best, if the pathological conditions permit, to put the patient on his side immediately after operation. This allows the tongue to drop forward and keeps the throat free. The patient should be watched by a competent person after the anesthetic is removed, so that proper treatment may be instituted if such is needed. Copious drafts of hot water should be given, to avoid dry retching, and at the same time wash out the

stomach if the patient vomits. The patient should be heavily covered, to encourage perspiration and render less likely congestion of the lungs and kidneys.

ANTISEPTIC TREATMENT OF THE PUERPERAL WOMAN.

KOLIPINSKI (*Medical News,* Dec. 31, 1904) decries the use of the vulvar pads which have recently been employed extensively in the puerperium. They interfere with drainage rather than facilitate it. Adherence to the vaginal douche is recommended. In this way the discharges, as well as any necrotic tissue or other poisonous material, are constantly kept washed out of the genital tract, and there is very small chance of infection, even though the most minute details of asepsis are not employed. A gallon of tepid boric acid solution made up at the rate of 1½ drachms of the acid to the pint of sterile water makes a satisfactory irrigation fluid. This is repeated three times daily for a week and then discontinued.

MASTOID OPERATIONS—A REPORT OF 281 CASES.

HASTINGS (*American Journal of the Medical Sciences,* January, 1905) reports upon 281 mastoid operations done at the New York Eye and Ear Infirmary. Of these 164 were for mastoiditis following chronic suppurative otitis media, 25 were secondary to former unsuccessful operations, and 48 were for the purpose of curing chronic ear disease where no symptoms of suppuration in the mastoid existed. In 2 cases meningitis occurred and was followed by death. The lateral sinus was uncovered and found normal in 69 operations. In no case did harm result from the exposure. In 8 out of 9 cases in which the sinus was accidentally opened no harm resulted, but in one case sinus thrombisis ensued. After a course of seventeen days of irregular fever, sweats, foul expectoration, and progressive exhaustion, death occurred. In 9 cases thrombosis of the lateral sinus existed before operation; of these 9 cases 5 died and 4 recovered. Of the 4 cases which recovered, in 2 the internal jugular was excised, and in the other 2 only the sinus itself was operated upon. The author infers from the history of these cases that in every mastoid where the involvement is extensive and where the sinus groove is found to be necrotic, the sinus should be uncovered and thrombosis looked for; also, that incision of the sinus wall is in some cases necessary in order to diagnose thrombosis. The total number of deaths was 17.

ANTHRAX SUCCESSFULLY TREATED BY SCLAVO'S METHOD WITHOUT EXCISION.

BOWLBY and ANDREWS (*British Medical Journal,* Feb. 11, 1905) report the case of a man thirty years of age with a characteristic lesion of anthrax on the forehead, from which virulent anthrax bacilli were obtained, cured by subcutaneous injection of 40 cubic centimeters of Sclavo's serum. The temperature and pulse quickly fell to normal and the local symptoms subsided; also subsequent bacteriological examinations failed to reveal the bacillus in the lesions. Excision was not practiced.

This case and another one previously reported by the same authors are the only ones in Great Britain in which reliance has been placed upon the serum alone. In both cases the results were good and confirmed the favorable reports from Italy.

LARYNGEAL TUBERCULOSIS: ITS TREATMENT.

BARWELL (*Edinburgh Medical Journal,* February, 1905) calls attention to the fact that laryngeal tuberculosis is a very common disease. It has been estimated that 50 per cent of cases dying of phthisis show it at post-mortem, and that one-half of these cases could be recognized clinically. The general treatment should be that instituted for the disease in other parts of the body. Only a soft whisper should be used in speaking, so that the larynx may be rested. As a palliative a laryngeal spray of a few minims of five-per-cent cocaine solution or an insufflation of morphine 1/16 of a grain, with 2 grains of starch or 3 to 5 grains of orthoform, should be given half an hour before meals. The cough and catarrhal condition of the upper air-

passages should receive appropriate treatment. The remedial treatment is best applied in the form of pigments, of which lactic acid is the best and may be used in 40- to 50-per-cent solution, gradually increased to 75-per-cent. The lesions themselves are curetted when there is much infiltration and deep or extensive ulceration. In some cases more extensive operations, as tracheotomy, thyrotomy, or partial laryngectomy, must be resorted to. The author's latest reports show that 44 cures have been obtained out of 211 cases. Tuberculous laryngitis complicated by syphilis of the larynx or by pregnancy does badly.

THE SUCCESSFUL TREATMENT OF FOREIGN BODIES WHICH HAD BEEN SWALLOWED BY THE INTERNAL ADMINISTRATION OF COTTON-WOOL.

BELL (*Liverpool Medico-Chirurgical Journal,* January, 1905) reports two cases of prompt passage by the bowel of a foreign body, swallowed by a child, brought about by administration of cotton-wool. The object in the first place was a gold brooch, and in the second a brass knob from a bedstead. The knob had been in the stomach three days before the cotton-wool treatment was instituted. In each case the foreign body was passed the morning after the treatment, although in the case of the knob castor oil and large amounts of food had been given without success. A small handful of absorbent cotton was employed in each case. It was given mixed in bread and milk and in jam sandwiches. The object in each case was passed enveloped in cotton.

ACUTE PELVIC PERITONITIS ASSOCIATED WITH GONORRHEAL SALPINGITIS—THE DIFFERENTIAL DIAGNOSIS AND TREATMENT.

ANSPACH (*Proceedings of Philadelphia County Medical Society,* Dec. 31, 1904) in an interesting article on this subject says that peritonitis due to the gonococcus is usually confined to the pelvis, but that it may rarely become general. The pelvic variety is seldom fatal. It bears a close resemblance to appendicitis, and it is extremely important to be able to differentiate between the two because the latter condition requires operation, whereas the former may be successfully treated without operation. Anspach's differential table is as follows:

GONOCOCCUS PELVIC PERITONITIS.	APPENDICITIS.
History. — Leucorrhea or vesical irritability soon after marriage or suspicious intercourse.	*History.*—Previous similar attacks. Habitual overeating, chronic intestinal indigestion.
Onset.—At or directly after a menstrual period.	*Onset.*—After indiscretion in diet.
Pain in lower abdomen—worse perhaps on one or other side.	*Pain* beginning in epigastrium, not well localized at first, later localized to appendiceal region.
Gastrointestinal Symptoms. —Nausea, vomiting, constipation, less marked.	*Gastrointestinal Symptoms.* —Nausea, vomiting, constipation, etc., more marked.

In general gonococcal peritonitis operation is advisable. If in the course of pelvic peritonitis of gonorrheal origin, distention, vomiting, tenderness, rigidity, diminished peristalsis, and the facies of septic intoxication appear, operation should be done.

TUBERCULOSIS OF THE KNEE-JOINT.

THOMSON (*Dublin Journal of Medical Science,* Jan. 2, 1905), after giving a detailed account of the older methods of treatment of a tuberculous knee-joint, discusses quite fully the method which he has selected as the best, namely, excision. Although this operation has been almost, if not quite, abandoned by many surgeons, he adheres to it as the operation of choice. Of 78 excisions he has lost but two cases. The age of his patients ranged from four to forty-seven years, and the cases have been of all degrees of severity. Thomson used a flat amputation saw with movable back. Every particle of diseased tissue should be removed, especially that in the long pouch under the quadriceps, into which a two-inch longitudinal incision is made to allow free access and drainage. The operation wounds are swabbed with pure carbolic acid, then washed out with absolute alcohol, and the cavity is drained toward the popliteal surface, the tubes being removed in forty-eight hours. The bones are held together by two dowel-pins which are carried through the tibia and into the femur, being made to cross like the letter X. These pins are allowed to protrude about two inches from the points of insertion and are easily and painlessly removed in three or four weeks. The dressing consists of a specially devised

hoop-iron splint 1½ to 2 inches wide extending over the buttock downward to the heel and forward along the sole; a similar splint is used in front. These splints are made to conform to the irregularities of the limb. They are held in place by ordinary bandages padded with cotton. The pins, together with this method of dressing, render the leg rigid and free from movement at the site of excision. In bed the leg is swung in a strong cradle. The patient is able to sit up with or without a bed-rest on the third day.

Thomson does not resort to primary amputation unless there is strong indication therefor, although twice he has done amputation secondarily because of nonunion. In the young the epiphysial lines should be avoided in order to prevent shortening due to lack of growth.

THE EFFECT OF TUBAL ABSCESS UPON THE POSITION OF THE URETER.

YOUNG (*Boston Medical and Surgical Journal,* Feb. 16, 1905) after giving the results of his investigations with abscesses of the Fallopian tubes in the living subject and upon the cadaver, and discussing at some length the etiology, thus sums up what he has endeavored to make manifest:

That small collections of pus in the Fallopian tubes do not displace the ureters.

That larger collections displace the ureters: (*a*) outward generally, whether the ureter is above or below the mass; (*b*) downward rarely, on to the posterior cul-de-sac.

That such displacements are probably due to (*a*) traction upon the infiltrated broad ligaments by the distended tubes, the ureter moving with the broad ligament; (*b*) direct pressure from the growing abscess, forcing the ureter in the direction of least resistance; (*c*) a combination of both.

He recommends evacuation of the pus through the vagina, saying that the incision should be made directly behind the cervix even if it is displaced, and that under no circumstances will the ureters be injured by this operation. If the abscess cavity does not reach the wall of the vagina it can be easily opened by working the finger through the cellular tissue of the broad ligament.

TWO CASES OF TRACHEAL STENOSIS FROM NEW GROWTH.

BREWER (*Medical News,* Feb. 11, 1905) reports two cases of tracheal stenosis with operation for its relief. The first patient was eleven years old, with a history of having suffered with papillomata of the larynx when five years of age. Operation for the removal of the tumors was refused, hence tracheotomy was performed, and it was necessary to wear a tube continuously, although attempts were made to dispense with it. Brewer operated by laying open the larynx and the cervical portion of the trachea and removing several papillomatous masses. At the end of thirty-six hours the use of the tube was abandoned. There was no dyspnea, and the patient made a good recovery, although the voice had not completely returned at the time the report was made.

The second case was a physician of fifty-two who had been suffering from attacks of dyspnea at intervals for a period of three years. After considerable difficulty in inducing chloroform anesthesia dissection was made over the cervical portion of the trachea, and after a prolonged and hazardous operation a large tumor, which proved to be an adenoma, probably of an accessory thyroid, was removed from the right of the trachea in the region of the sternoclavicular joint. The pressure of this tumor upon the trachea produced the dyspnea. The patient made a prompt recovery.

COLLES'S FRACTURE.

CAMPBELL (*Brooklyn Medical Journal,* January, 1905) says that Colles's fracture ranks next in frequency to fracture of the clavicle. It occurs because there is a weak spot in the radius about three-fourths of an inch from its lower end, and because the cross-strain is brought upon this part of the bone when man falls upon his hyperextended hand. Except in elderly people true impaction as a rule does not occur. Thus the absence of crepitus and abnormal mobility is to be accounted for, not by impaction but by the interlocking of the roughened surfaces of the two fragments in their usual abnormal position, and by their being held firmly in the strong muscular contraction in the forearm.

The fracture, which cannot be satisfac-

torily reduced without anesthesia, should be immediately reduced. If replacement is accurately done, any form of splint will give a good result. The best method of reduction consists in supinating the hand and flexing it at a right angle at the carpal joint with the fingers extended. At the same time traction is made upon the hand while it is flexed, and counter-pressure is made with the thumb upon the upper fragment of the radius.

The important point in connection with the splint is that the sling should be adjusted so that the weight of the arm is borne upon the ulna, and the hand is left free outside of the sling, that by its weight it may be carried toward the ulnar side.

Several months will elapse before pronation and supination can be freely accomplished. Even with the best of treatment some deformity may result, and the patient should be so informed.

SYMPATHECTOMY FOR GLAUCOMA.

MARPLE (*Journal of the American Medical Association,* Dec. 31, 1904) reports two cases of resection of the superior cervical ganglion of the sympathetic for glaucoma. From these two cases, together with three others previously reported, he concludes that this operation is not indicated in acute inflammatory glaucoma, and that if an operation is ever indicated it is in cases of chronic simple glaucoma. The best that can be said for the operation is that it cannot do any harm and may possibly do some good, and that, in view of the brilliant results obtained by some, one is warranted in suggesting it to otherwise hopeless cases.

HERNIA IN INFANCY AND CHILDHOOD —ITS MANAGEMENT.

COLEY (*Journal of the American Medical Association,* Jan. 14, 1905) says that one-third of all cases of hernia occur in children under fourteen. He believes the truss treatment should always be chosen for children under the age of four years, except when there is a history of strangulation that has been reduced by taxis, when despite carefully directed truss treatment the hernia has become irreducible or reducible with difficulty, when the rupture cannot be controlled by a truss and is gradually increasing in size, when there is femoral hernia, or when a hernia is associated with reducible hydrocele or fluid in the hernial sac.

Two-thirds of all cases under four years can be cured by carefully directed truss treatment, although there will be a considerable number of relapses in after years. A fair proportion of cases can be cured after the age of four years by this treatment if it is carefully supervised by a surgeon. Coley considers the "opposite-side" or "cross-body" truss the best. A truss should be applied as soon as the hernia has been recognized, and should be worn day and night. The great majority of umbilical hernias can be cured by a truss. If hernia persists after careful truss treatment, an operation should be performed. If the rupture first appears after four years of age there is much to be said in favor of operative over mechanical treatment, and he is inclined to advise operation in the majority of such cases. It is a mistake to consider hernia in children more readily cured by operation than in adults. The operation must be more carefully performed on account of the delicacy of the tissues. When this is done the results are almost perfect. Chromicized kangaroo tendon or other absorbable suture is to be preferred. The Bassini method, modified by placing one suture above the cord, gives the best results. No drainage is used, the wound is dressed on the seventh day, the patient is kept in bed two weeks, allowed to go out in eighteen days to three weeks, and required to wear a spica bandage until four weeks have elapsed. The removal of the veins of the cord is never necessary in children.

In cases of inguinal hernia complicated by undescended testis, Coley uses the Bassini method, except that he does not transplant the cord. He frees the cord high up and brings the testicle into the scrotum.

Strangulated hernia is comparatively rare in children, and most frequent during the first two years of life. Eleven of Coley's thirteen cases were under two years. The operation is the same as that for radical cure in non-strangulated cases.

Prior to the introduction of rubber gloves in 1897 primary healing took place in 96 per cent of cases, and since the introduction of gloves in 99 per cent. Between August, 1891, and July, 1904, Coley performed 825 operations for radical cure of hernia in children under fourteen with one death, which was due to ether pneumonia. Four operations were for umbilical, four for epigastric, 25 for femoral, 790 for inguinal hernia. In 775 cases done by Bassini's method, with the substitution of chromicized kangaroo tendon, there were but three relapses. In 15 cases in which the cord was not transplanted five relapses occurred. In 25 cases of femoral hernia there has not been a relapse. The purse-string suture with kangaroo tendon has been used.

TUBERCULAR PERITONITIS.

C. H. MAYO (*Denver Medical Times*, February, 1905) says that in the treatment of tuberculous peritonitis in males the incision is made over the appendiceal region, while in women it is so made as to permit of exploration of the pelvis. The object of the operation is to search for the original lesion and remove it, whether it be the Fallopian tube, appendix, or other structure. Great care must be exercised not to open the bowel in separating adhesions of the intestines. After removal of the tuberculous focus iodine or iodoform emulsion is applied to the diseased area. The general peritoneum, if tuberculous, is left to take care of itself, and the abdomen is closed without drainage.

A CONDITION OF THE LOWER LIMBS OFTEN MISTAKEN FOR PHLEBITIS.

In the early stages of phlebitis, and in certain subacute cases, the symptoms are sufficiently indefinite to lead to conditions being diagnosed as phlebitis which are certainly not of that nature. The result is that treatments are adopted which are sometimes harmful, useless, and wasteful of the patient's time.

BENNETT (*British Medical Journal*, Dec. 10, 1904), in connection with these indefinite symptoms, describes a condition of the lower limbs characterized by rapid onset and diffuse pain, rather irregular in distribution, increased by slight pressure, and relieved by heavy pressure. The limb is moderately swollen, but not edematous. The swelling is not influenced by position; if not general it is limited to the distribution of certain cutaneous nerves, especially the internal and middle cutaneous, to the saphenous and the external cutaneous in the thigh, and to the musculocutaneous in the leg and dorsal aspect of the foot. When the whole limb is involved the normal outline is preserved, contrasting strongly with the shapeless swelling which occurs in phlebitis of the femoral or iliac vein. The cause of the trouble is unknown, but it has been seen to follow enteric fever and malaria. Evidently not an ordinary neuritis, it may have some relation to pseudoarthritis, or may be due to vasomotor disturbance.

Rest has no beneficial effect, but even if no treatment is adopted, recovery invariably occurs. Treatment is necessary to bring about a speedy cure, and consists in massage, electricity, passive movements, and resistance exercises.

DUODENAL ULCER AND ITS TREATMENT.

The *British Medical Journal* of December 17, 1904, contains a fairly exhaustive résumé of the treatment of duodenal ulcer by D'ARCY POWER. The author concludes as follows:

Duodenal ulcers are not very uncommon. They are single, and are more frequent in men than in women. The ulcers may perforate and cause acute symptoms, or they may heal, and by cicatrization lead to symptoms of chronic duodenal obstruction.

The sequelæ of a healed ulcer may be so remote that the symptoms are mistaken for those due to cancer of the pylorus, and the patient is allowed to drift from bad to worse under the erroneous notion that he is bound to die.

There is no means in a great many cases of recognizing the existence of a duodenal ulcer until it perforates, or until the results of its cicatrization become manifest.

The treatment of duodenal ulceration

consists (1) in the direct suture of a perforated ulcer, the prognosis being less favorable than in similar cases of perforation; (2) the performance of gastro-jejunostomy in cases of dilated stomach due to duodenal constriction, the prognosis being the most favorable of all the conditions for which this operation is performed at the present time.

SURGICAL ANESTHESIA IN CHILDHOOD.

It is stated by ERDMANN (*Brooklyn Medical Journal,* January, 1905) that few children die of anesthesia, and that as a rule a child bears an anesthetic better than an adult. This is accounted for on the ground that the general health of children is less apt to be impaired than that of adults; fewer major operations are necessary in early life; and anesthetists as a rule exercise greater caution.

In children, care should be taken to keep up the body heat, to obviate the loss of a large amount of blood, and to shorten the period of anesthesia as much as possible. The life of the child is divided for the purpose of this consideration into three periods: (1) Up to the completion of the first dentition; (2) the interval from the completion of the first dentition to the completion of the second; (3) from the second dentition to puberty. To these may be added a fourth, which covers the fetal life. The fetus *in utero* is quite susceptible to the effects of an anesthetic. Ether is more dangerous for it than chloroform, because so much of the former is taken up by the maternal blood that its oxygen-carrying power is thus lessened.

An anesthetic is seldom used in children under three months of age. In using an anesthetic during the first period above mentioned, the surgeon should take account of the small size of the nasopharynx, the ease with which the relations of the thoracic contents are disturbed on account of the flexibility of the spine, and the relatively small lung capacity. Chloroform is safer for this period because it is less likely to produce congestion of the air-passages. Ethyl chloride is also very efficient.

During the second period chloroform is not generally employed, although it is not objectionable if carefully administered. The respiratory and circulatory apparatus are stronger and less susceptible to the evil effects of the anesthetic. As a rule a child should be gradually brought under the influence, and in some cases the anesthetic must be forced. A drop of oil of eucalyptus or gaultheria placed upon the cone will disguise the odor of the anesthetic. The eye, the pulse, and the respiration are poor guides to the condition of the patient. The most reliable danger-sign is a deepening leaden, ashy pallor. When this occurs the anesthetic should be withdrawn.

In the third period it is necessary as a rule to force the anesthesia. In this stage nitrous oxide and ethyl chloride are especially advantageous, and they may be used to precede the ether or chloroform.

The kind of operation as well as the condition of the child should be carefully considered. While the percentage of major operations in children is small, there is frequently present some impoverished state of the blood or some other condition of lowered vitality. The most important condition is the status lymphaticus. Anesthesia can frequently be induced in children while sleeping without wakening them. In this way the resistance of the child is obviated.

Reviews.

A SYSTEM OF PHYSIOLOGIC THERAPEUTICS. Edited by Solomon Solis Cohen, A.M., M.D. Volume XI. P. Blakiston's Son & Company, 1905.

We have already reviewed in terms of praise the earlier volumes of this very exhaustive encyclopedia of remedial measures other than drugs. The present volume, which closes the series, contains, as an opening article, one on Serum Therapy by Joseph McFarland, M.D.; a second upon Organotherapy is by Oliver T. Osborne, M.D.; another upon Radium, Thorium, and Radioactivity by Dr. Samuel G. Tracy; and a fourth upon Counter-irritation, External Applications, and Bloodletting by Frederick A. Packard, M.D. The last article consists in an outline of the principles of therapeutics with a special reference to physiologic therapeutics, by the editor, with an addendum on *X*-ray Therapy. The volume closes with an "index-digest" of the complete system of the eleven vol-

umes, which has been compiled by Dr. R. M. Goepp and Dr. Charles W. Bonney. This index is so complete that it covers 130 pages.

The table of contents which we have just given reveals to our readers the fact that the present volume deals with a large number of remedial agents which ten years ago were practically unknown. Dr. McFarland makes clear in his article the new theories of Ehrlich in regard to immunity, using the diagrams of that well-known German investigator to make his meaning more clear. In the second chapter he deals with special serum-therapeutics, or, in other words, with the individual serums which have been so far commonly employed in medicine. We are somewhat surprised to find that Dr. McFarland has only taken twenty-six pages, about 10,400 words, for the consideration of one of the largest subjects in modern therapeutics. Probably it was not his intention to provide an exhaustive article upon this theme. The article by Dr. Osborne upon Organotherapy covers, on the other hand, nearly sixty pages, although the subject is scarcely as large a one as that of serum therapy. Although physicians are perhaps inclined to leave the older methods of external treatment, such as counter-irritation and bloodletting, too severely alone, the facts adduced and the confidence manifested as to their value by Dr. Packard in his article are well worthy of much consideration. That upon Radium, Thorium, and Radioactivity covers about ninety pages, and Dr. Cohen's article about fifty. We think that the author has done well to sum up his own views in regard to non-medicinal agents in the closing article of this volume, for there can be no doubt that the importance of remedial measures other than drugs is increasing day by day.

To sum the matter up, this volume gives one an outline of the various subjects which it discusses, but cannot be considered by any means an exhaustive description of these modern methods.

We congratulate the editor and the publisher upon the completion of a very very large and difficult task, and think it fortunate that the profession has had summarized for it a large number of facts which have hitherto been widely scattered.

NORMAL HISTOLOGY AND MICROSCOPICAL ANATOMY. By Jeremiah S. Ferguson, M.Sc., M.D. New York and London: D. Appleton & Company, 1905.

A new text-book dealing with histology should have special features in order to merit a position among a number of acceptable works at present available. Dr. Ferguson has presented such a volume, and the publishers have done much to make it attractive. The general scheme of the publication shows no striking departure from the usual, but in arrangement follows the commonly adopted classification and sequence of subjects. The work opens with a consideration of the cell and of histologic units, followed by descriptions of tissues, and finally of organs. The general allotment of space seems on the whole well chosen, and any criticism of this feature must be nothing more than an expression of the personal bias of the reviewer. There seems no adequate return for an arrangement which intercalates some 300 pages treating of other matters between the chapters dealing with nervous tissues and nerve terminations and the systematic consideration of the nervous system. The arrangement necessitates a duplication of text and even of illustrations (Figs. 100 and 370, 106 and 402), adding bulk for which there appears to be no special demand. The volume is conspicuous because of the large space given to the nervous system; of thirty chapters, seven (if the eye be included, eight) are devoted to this subject, the importance of which cannot be overestimated. The digestive system with its glandular appendages receives 84 pages, the nervous system 100 pages.

The author's presentation is clear, his sequence related, and the selection of illustrations discriminating. The term "highly magnified" applied to some of the figures should be dropped, and the prevalent tendency to present impossible enlargements—magnification attainable by no appliance available—should be suppressed. Both tend to confuse the student, and neither makes for clearness. As a rule photomicrographs are disappointing; some of the pictures establish the correctness of this view, while others adequately serve their purpose. Errors and misleading or obscure statements are of exceedingly infrequent occurrence. The

inference (p. 35) that all connective tissue cells containing basophilic granules are mast cells could have been made clearer.

In a number of places, particularly in the central nervous system, a tinge of physiology is dexterously added and greatly enhances the value of the book. The inclination to criticize any tendency toward "applied histology" in works on this subject and gross morphology is clearly wrong, and Dr. Ferguson's judicious correlation of something about function with his consideration of structure is highly commendable. The sketchy chapter on technique is accurate but necessarily incomplete.

The publishers have produced a presentable volume, although there is no doubt that the author sees in some of the color work opportunities for improvement. Dr. Ferguson is to be congratulated upon the general excellence of his book, which may safely be predicted a secure position among standard textbooks on the subject. W. M. L. C.

ACUTE CONTAGIOUS DISEASES. By William M. Welch, M.D., and Jay F. Schamberg, A.B., M.D. Lea Brothers & Company, Philadelphia and New York, 1905. Price $5.00.

We extend a most hearty welcome to this very excellent book prepared by two authors whose experience in the study of contagious diseases is as large as, or larger than, that of any other physician in this country. In the preface we are told that the text is based upon a personal study of over 9000 cases of smallpox, 9000 cases of scarlet fever, 10,000 cases of diphtheria, and a considerable number of cases of other contagious diseases which have been treated in the Municipal Hospital of Philadelphia during the last thirty-three years, during which period one of the authors, Dr. Welch, has been physician-in-charge of that hospital. The book contains nearly 800 pages, and in it we find a most excellent and exhaustive description of vaccination, the variolous diseases of the lower animals, smallpox, chicken-pox, scarlet fever, rubella, typhus fever, and diphtheria. There are also concluding chapters upon the treatment of diphtheria and one upon disinfection. In addition to excellent descriptions of the symptomatology of these various diseases the book contains a large number of excellent illustrations, many of which are arranged in series—that is, they show the same patient in various stages of onset, acme, and convalescence. As one would suppose, a very considerable part of the book is devoted to smallpox and vaccination, no less than 300 pages being devoted to this subject.

Not only are the subjects of etiology and diagnosis thoroughly and clearly discussed, but an unusual amount of information is given as to the views of the authors concerning treatment. The book is of value not only because it presents the views of its experienced authors, but also because it provides us with a wealth of material, extracted from old and modern literature, concerning the various diseases of which it treats.

In the treatment of diphtheria the authors not only give their own methods, but quote very largely those which are employed by others. In some instances we believe that their therapeutic recommendations are based rather upon the methods employed prior to the introduction of antitoxin than upon present needs. We also note that careful attention is given to intubation and to methods of feeding diphtheritic patients.

One cannot help but be interested in noting the attitude of the authors in regard to the important subject of serum therapy in diphtheria, for it will be remembered that Dr. Welch, notwithstanding his long experience in the treatment of this disease, was one of those who, at least in the early days of the use of antitoxin, published opinions which did much toward making other physicians hesitate in its use. An examination of the portions of the book dealing with this subject reveals the fact that the authors have little to say themselves in regard to its value, quoting largely from other writers, and occasionally introducing a paragraph which shows that they are not unfriendly to its use. This we consider regrettable, particularly as they state that "more than one death has been reported as immediately following the injection of serum," which gives the uninformed an erroneous idea as to the danger of this remedy. Perhaps these intimations, that diphtheria antitoxin is not as valuable as it might be, are rather the opinions of Dr. Welch than of Dr. Schamberg, although the third person plural is used in the sentences to which we refer.

While text-books on the practice of medicine give, in the great majority of cases, an adequate description of the various diseases which are studied in this work, none of them have the space to exhaustively consider the subject in a satisfactory manner, and therefore this book fills a niche in the physician's library in a way which is not equaled by any other publication. We cordially commend it to our readers as being the best work on the subject in the English language.

AN INTRODUCTION TO CHEMICAL ANALYSIS. For Students of Medicine, Pharmacy, and Dentistry. By Elbert W. Rockwood, M.D., P.D. P. Blakiston's Son & Company, Philadelphia, 1904. Price $1.50.

This is a small volume of 255 pages, devoted, as its title indicates, to ordinary methods of chemical analysis. The first part deals with the qualitative analysis of metals, acids, and organic compounds, the second with volumetric analysis, the third with applied analysis, and the fourth with the preparation and testing of reagents with the chemical elements, symbols, atomic weights, and the metric system. In some respects it would perhaps have seemed more natural if the last part had been the first.

Physicians who are fond of doing some chemical work, and yet have not time for exhaustive analysis, will find the methods herein described for the recognition of the chemical substances often used in medicine briefly and concisely given. It is essentially a laboratory manual, and not a complete work.

DISEASES OF THE HEART. By Edmund Henry Colbeck, B.A., M.D. Second Edition, Revised and Enlarged. W. T. Keener & Co., Chicago, 1905. Price $2.50.

Dr. Colbeck's book is a small octavo volume of 350 pages, in which he discusses the anatomy, pathology, and symptoms of cardiac disease with special reference to diagnosis. After these opening chapters he deals with the various forms of valvular disease, with diseases of the heart muscle, and with congenital lesions of the heart. A comparatively small amount of space is devoted to the therapy of the various conditions under consideration. We are surprised to find that in the chapter on cardiac asthenia the author tells us that "Da Costa has comparatively recently described this condition." As Dr. Da Costa's studies were made at the close of the Civil War—some forty years ago—we imagine that the author is not familiar with his original contribution. The book is rather a record of personal views and experiences than a representation of our general knowledge in regard to the conditions described.

A BOOK ABOUT DOCTORS. By Thomas Cordy Jeaffreson. The Saalfield Publishing Company, Akron, Ohio, 1905.

This book, which belongs to the Doctor's Recreation Series, two issues of which we have already noticed in these columns, contains twenty-seven chapters, which in reality are twenty-seven brief essays upon different subjects dealing with a doctor's life, or with individuals in medicine who have achieved fame in medicine in England and America. In other words, some of the sketches are biographical, while others are pure fiction. There are a number of illustrations, many of which are already familiar to the profession, such as, for example, the illustration of Professor Billroth's Surgical Clinic. The volume is an interesting one for the physician who, after a day's work, is often desirous of picking up a book which deals not so much with the practice of medicine as with nearly related facts which will prove entertaining and at the same time edifying.

THE DETECTION OF POISONS AND STRONG DRUGS. By Dr. Wilhelm Autenrieth. Authorized Translation by William H. Warren, Ph.D. Illustrated. P. Blakiston's Son & Company, Philadelphia, 1905. Price $1.50.

In the 222 pages of this volume the author gives us methods for a quantitative estimation of medicinal principles in certain crude materials. The first deals with the estimation of volatile poisons such as phosphorus, hydrocyanic acid, chloroform, carbon disulphide, etc. The second chapter deals with non-volatile organic substances such as picrotoxin, caffeine, colchicine, etc., and with the various alkaloids or drugs commonly employed in medicine. The third deals with metallic poisons. The fourth chapter discusses poisons in the groups already mentioned. The fifth chapter takes up the quantitative estimation of alkaloids and active principles in crude materials, as, for example, the estimation of cantharidin in Spanish flies, of caffeine in coffee and tea,

of nicotine in tobacco, and of strychnine in nux vomica.

The book is a useful but brief laboratory manual, more valuable to the busy physician than to the chemist who devotes his time solely to this form of research.

OPERATIVE SURGERY. By Joseph D. Bryant, M.D. In Two Volumes, Illustrated. Fourth Edition. Printed from New Plates, Entirely Revised and largely rewritten. D. Appleton & Co., New York and London, 1905.

The call for a fourth edition of Bryant's Operative Surgery demonstrates that even such literary and technical masters as Treves and Jacobson have failed fully to appreciate the needs of the American practitioner.

There have been many additions to this last work, some of which impress the reviewer as having been inserted more with the idea of representing the dominant thought of current literature than because the procedures have possessed distinct advantages which won for themselves a permanent place in surgical technique. There are also some omissions, but none of great importance.

As usual in operative surgeries there is a lengthy section upon ligature of arteries in continuity, in which is included the ingenious procedure of Matas for the cure of aneurism and Murphy's method of suture of divided arteries. It is noteworthy in craniotomy the author prefers the use of the chisel. The methods of Rose, Hartley, Cushing, and Doyen are given in full for the removal of the Gasserian ganglion.

In the section upon surgical treatment of stricture of the esophagus the most serviceable device of recent years—*i.e.*, the string guide introduced by swallowing—is not mentioned.

The section devoted to operations upon the viscera connected with the peritoneum is unusually full. Bryant evidently prefers through-and-through suture in closing abdominal wounds.

The final section of the book is devoted to miscellaneous operations, under which are considered suture of the patella, suture of the olecranon process, the union of fractured long bones, nailing the head of the femur, the application of the Parkhill splints, operations on the cervical sympathetic nerve, and some plastic operations for common deformities of the ear.

For the practical surgeon the book is an extremely useful one, enabling him in the briefest space to review in the main the most modern and approved procedures of surgery.

Correspondence.

LONDON LETTER.

BY G. F. STILL, M.A., M.D., F.R.C.P.

The success of surgery in the treatment of biliary calculus is one of the most important advances in abdominal operation. A gall-stone in the common duct has usually caused the death of the patient, unless nature has succeeded in displacing it, and even when removed by skilful surgery the mortality has been high. Mr. Mayo Robson in a paper read before the Medico-chirurgical Society this month stated that the mortality in his operations for this condition was formerly 16.2 per cent, but recently by exposing the biliary passages more thoroughly he had in a series of eighty operations had only three deaths, a mortality of less than 3.9 per cent. The diagnosis of this common-duct cholelithiasis may be by no means easy. In some of his cases there was no jaundice, only repeated rigors; in some cases there was deep jaundice with rigors, but with no pain. The symptoms were in fact largely those of septic poisoning, and with free drainage of the bile passages these all disappeared speedily. Many of Mr. Robson's patients were advanced in age, and a successful result he thought might be looked for even in patients over seventy years of age. The percentage of recoveries was about 95.

At the recent discussion on the after-course of cases operated upon for appendicitis it was clearly shown that even removal of the appendix does not always permanently abolish attacks resembling appendicitis in character; but in these cases at any rate there is reason to believe that the stump of the amputated appendix, or some inflammatory trouble remaining in the neighborhood, is responsible for the perpetuation of symptoms. It is also quite certain that symptoms closely resembling appendicitis may occur where the appendix is perfectly normal; we have even heard of laparotomy in such

cases, with totally unnecessary removal of the innocent appendix. But alas! even when we have dispensed with our appendix we are not to be left in peace: if the right iliac fossa does not give trouble, the left may, according to Dr. Rolleston, who now describes a "pericolitis sinistra," which has the symptoms of appendicitis, only on the left side of the abdomen. Peritonitis of any degree, or abscess, may occur about the sigmoid flexure of the colon, or, as in appendicitis, perforation may take place with resulting general peritonitis. The condition is dependent upon constipation with ulceration of the mucous membrane.

In the discussion which followed it was shown that other physicians had met with this disease, but Dr. De Haviland Hall thought that some of the cases might be of rheumatic origin, the inflammation starting outside the bowel in the serous membrane—another point perhaps in which this condition may resemble some cases of appendicitis.

At the same meeting an interesting report was made of an epidemic of infective colitis, which attacked about thirty cases, mostly children, with fatal result in some cases. The colon was found to be extensively ulcerated, and the bacillus enteritidis sporogenes, which Dr. Klin considers to be one of the exciting causes of summer diarrhea in infants, was found in the contents of the colon. The channel of infection was thought to be the water used for drinking. The colon is coming in for a considerable amount of abuse just now; we have long been taught to regard the appendix as a superfluity, but the inherent wickedness of the colon is only now being exposed. The Chelsea Clinical Society last month added to its crimes (the colon's, I mean) such a list of evils in connection with chronic constipation that it could only be concluded—as is the propensity now-a-days—that "something must be done." Mr. W. A. Lane advocated short-circuiting by connecting the lower end of the small intestine with the sigmoid or the rectum. One gentleman apparently would like to remove the colon altogether, but as a compromise accepted the anastomotic procedure already mentioned. Experimental observations were adduced to show that man could get on quite well without his colon. It had been feared that if the large intestine were eliminated the patient might suffer from chronic diarrhea, owing to lack of that absorption of fluid which is known to take place in the colon; but it was found that after the operation the stools gradually became normally firm, the small intestine having, as it would seem, taken on the absorptive function of the large. True, a certain proportion of fat was absorbed from the feces also in the colon, and digestion of cellulose also was partially carried out in the large intestine, but perhaps the small intestine would take over these functions also. On the whole, in spite of the imperfections of the present arrangement, there is some satisfaction in feeling that *homo sapiens,* surgical or otherwise, is not likely ever "to boss creation for a week!"

Fortunately he is not even likely to impress the rulers of the land with any conviction of the necessity for tinkering nature's handiwork wholesale, as some writer in one of our London medical journals recently proposed, apparently wishing to make it compulsory by law that every child who has adenoids should have them removed, regardless of the fact that a certain amount of such tissue is normally present, and that even when present in a degree somewhat above the average it does not necessarily do any harm whatever, and even when producing some symptoms may, if these are but slight, cease to do so as the child grows older.

A curious joint affection which has attracted attention within the past few years was illustrated by a record of three cases by Prof. Howard Marsh at the Clinical Society this month. It is the so-called "intermittent hydrops of the joints," in which one or more of the joints become swollen with evident effusion at regular intervals—in one case every twelve days, in two others every fourteen days. During the intervening periods the joints were perfectly normal, and even after several years of these recurrences the joints remained unimpaired, and therefore whatever the nature of the disease might be—and this is quite uncertain—it is probably not inflammatory. The point of chief practical importance is the recognition of the disease, for it might be mistaken for loose cartilage and lead to useless opera-

tion. The only treatment which seems to do good is the administration of arsenic.

Amongst the events of the month in the medical world of London must be mentioned the meeting which was held at the Royal College of Physicians to discuss the possibility of amalgamating or confederating the medical societies of London. The idea is to unite several of the societies to the extent of housing them under one roof, and arranging a financial scheme which would allow admission to the advantages of all the confederated societies by one subscription. Two societies in London, the Royal Medical and Chirurgical Society and the Medical Society, have considerable property, particularly in the form of libraries, and the success of the present attempt must depend to a large extent upon their attitude toward the scheme. There seems to be a wide-spread feeling in favor of some such confederation, but the details have yet to be worked out, and this is not the first time that an attempt has been made at some combination of this sort.

Another important meeting was held at the Royal College of Physicians a few days ago, when the annual election of president took place. It was understood that Sir William Church, who has held this office since 1899, would not take it again, and after some close voting Sir R. Douglas Powell was elected president.

PARIS LETTER.

By A. R. Turner, M.D. (Paris).

In a recent number of the *Journal des Praticiens* Dr. Renon, physician of the Pitié Hospital, has indicated the therapeutics of the early stage of consumption. One of the best drugs to be used, according to Dr. Renon, is arsenic, and he administers it in the following manner:

> Arseniate of soda, 0.05 centigramme;
> Distilled water, 300 grammes.
>
> One large spoonful before lunch and dinner, for twenty days every month during three or four months.

He also adds a small amount of tincture of lobelia where there is a dry cough. This preparation never causes any disagreeable symptoms, and does not bring about diarrhea, nephritis, or pigmentation. Fowler's solution may also be employed, or the cacodylates, which are still holding their own in France. Arrhenal, which seemed to be better indicated, as it could be given by the mouth, has seemed to lose favor, most likely on account of gastric disturbances. On the other hand, creosote has but few indications, as given by the mouth it causes serious gastric trouble. In certain torpid forms, and where there is extensive suppuration, it is of some use, not more than 1.50 to 2 grammes being given daily.

At a meeting of the Medical Society of the Hospitals, Professor Vaquez, a well known heart specialist, read a report on a case of aortic regurgitation, which had rapidly developed in a patient suffering from a mild form of locomotor ataxia, and who had felt a sudden pain in his chest while getting off a tramcar. At night he heard a sort of rasping noise which seemed to come from his chest. On examination a double blowing sound is heard over the aorta which indicates the rupture of a valve. There are also symptoms of locomotor ataxia, such as abolition of the patellar reflex, irregular pupils, with Argyll's sign on one side, and medullar leucocytosis. Syphilis is found as an antecedent.

Dr. Tuffier has written a note to the *Presse Médicale* on the question of anticancerous serums, and especially that of Loeffler, in which he states the following facts: One may take any serum, antitetanic or antidiphtheritic, inject it into a cancerous patient, and note an amelioration. The tumor may even diminish one-half in size. Sooner or later, however, its effect is lost, and the disease progresses sometimes more rapidly than before. These serums seem to be beneficial because they bring about hyperleucocytosis.

Paquelin, the inventor of the cautery which bears his name, has just died. He was a man very much esteemed by his friends, but did not belong to the Paris hospitals. Another physician whose loss will be much felt is Dr. Soupault, the well known stomach specialist. He had been suffering from diabetes during the last six years, but it was only recently that he became aware of it, on seeking to take out a life insurance policy. He worked to the very last on a treatise concerning diseases of the stomach, and corrected the last proof-sheets a few hours before diabetic coma set in.